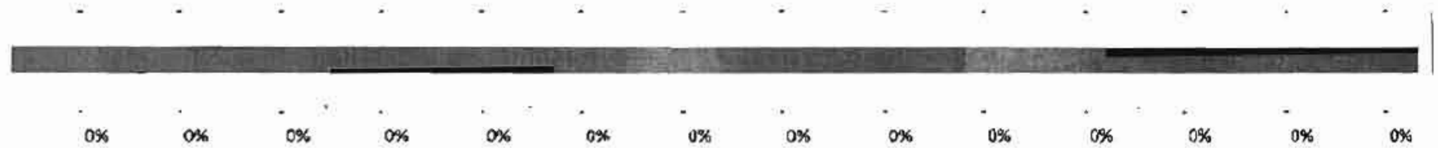
1.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.21	4.21	4.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4.21	4.21																

Frontier Works Organization
BOT Div

Part-III

1-Jul-56 31-Dec-56 2056	1-Jan-57 30-Jun-57 2057	1-Jul-57 31-Dec-57 2057	1-Jan-58 30-Jun-58 2058	1-Jul-58 31-Dec-58 2058	1-Jan-59 30-Jun-59 2059	1-Jul-59 31-Dec-59 2059	1-Jan-60 30-Jun-60 2060	1-Jul-60 31-Dec-60 2060	1-Jan-61 30-Jun-61 2061	1-Jul-61 31-Dec-61 2061	1-Jan-62 30-Jun-62 2062	1-Jul-62 31-Dec-62 2062	1-Jan-63 30-Jun-63 2063
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%
3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%
3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%
3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%	3.44%
45.26	47.47	49.79	52.22	54.76	57.44	60.24	63.18	66.26	69.50	72.89	76.45	80.18	84.09
14.97	15.49	16.02	16.57	17.14	17.73	18.34	18.98	19.63	20.30	21.00	21.73	22.47	23.25
14.97	15.49	16.02	16.57	17.14	17.73	18.34	18.98	19.63	20.30	21.00	21.73	22.47	23.25
14.97	15.49	16.02	16.57	17.14	17.73	18.34	18.98	19.63	20.30	21.00	21.73	22.47	23.25
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Dte



Frontier Works Organization
BOT Dte

Project Cost

Start Date		1-Jan-17	1-Feb-17	1-Mar-17	1-Apr-17	1-May-17	1-Jun-17	1-Jul-17
End Date	31-Dec-16	31-Jan-17	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17
Year		2017	2017	2017	2017	2017	2017	2017

Description	Amount
Land Cost	**2**
Pipeline	
Jetty to Pumping Station	4.57
Mahmudkot to Faisalabad	111
Mahmudkot to Tarrujaba	31
Faisalabad to Machikai	181
Storages	
100,000 MT	-
50,000 MT	-
35,000 MT	-
SCADA	20
Jetty Cost for structural imp & increasing the Draft	50
Construction Cost	**398**
Escalation	67
Contingencies	8
EPC Cost	**473**
Design, Supervision & Consultancy	14
Management Fees	5
SPVC Cost	1
Insurance	5
Development Cost	**25**
Pipeline Fill Cost	81
Interest During Construction	52
Financing Cost & Fees	66
Reserve Requirements	70
Total Project Cost	**769**

Escalation	Period	Escalation	Factor	Proportion of Cost	Cost Impact	Value
Year 1	1.0	8.0%	1.08	33%	133	11
Year 2	1.0	8.0%	1.17	33%	133	22
Year 3	3.0	8.0%	1.26	33%	133	34

Frontier Works Organization BOT Cte

1-Aug-17	1-Sep-17	1-Oct-17	1-Nov-17	1-Dec-17	1-Jan-18	1-Feb-18	1-Mar-18	1-Apr-18	1-May-18	1-Jun-18	1-Jul-18	1-Aug-18	1-Sep-18	1-Oct-18	1-Nov-18	1-Dec-18	1-Jan-19
31-Aug-17	30-Sep-17	31-Oct-17	30-Nov-17	31-Dec-17	31-Jan-18	28-Feb-18	31-Mar-18	30-Apr-18	31-May-18	30-Jun-18	31-Jul-18	31-Aug-18	30-Sep-18	31-Oct-18	30-Nov-18	31-Dec-18	31-Jan-19
2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2019

Frontier Works Organization
SOT Div

1-Feb-19	1-Mar-19	1-Apr-19	1-May-19	1-Jun-19	1-Jul-19	1-Aug-19	1-Sep-19	1-Oct-19	1-Nov-19	1-Dec-19	1-Jan-20	1-Feb-20	1-Mar-20	1-Apr-20	1-May-20	1-Jun-20	1-Jul-20
28-Feb-19	31-Mar-19	30-Apr-19	31-May-19	30-Jun-19	31-Jul-19	31-Aug-19	30-Sep-19	31-Oct-19	30-Nov-19	31-Dec-19	31-Jan-20	29-Feb-20	31-Mar-20	30-Apr-20	31-May-20	30-Jun-20	31-Jul-20
2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2020	2020	2020	2020	2020	2020	2020

Frontier Works Organization
BOT Div

1-Aug-20	1-Sep-20	1-Oct-20	1-Nov-20	1-Dec-20	1-Jan-21	1-Jul-21	1-Jan-22	1-Jul-22	1-Jan-23	1-Jul-23	1-Jan-24	1-Jul-24	1-Jan-25	1-Jul-25	1-Jan-26	1-Jul-26	1-Jan-27
31-Aug-20	30-Sep-20	31-Oct-20	30-Nov-20	31-Dec-20	30-Jun-21	31-Dec-21	30-Jun-22	31-Dec-22	30-Jun-23	31-Dec-23	30-Jun-24	31-Dec-24	30-Jun-25	31-Dec-25	30-Jun-26	31-Dec-26	30-Jun-27
2020	2020	2020	2020	2020	2021	2021	2022	2022	2023	2023	2024	2024	2025	2025	2026	2026	2027

Frontier Works Organization

1-Jul-27	1-Jan-28	1-Jul-28	1-Jan-29	1-Jul-29	1-Jan-30	1-Jul-30	1-Jan-31	1-Jul-31	1-Jan-32	1-Jul-32	1-Jan-33	1-Jul-33	1-Jan-34	1-Jul-34	1-Jan-35	1-Jul-35	1-Jan-36
31-Dec-27	30-Jun-28	31-Dec-28	30-Jun-29	31-Dec-29	30-Jun-30	31-Dec-30	30-Jun-31	31-Dec-31	30-Jun-32	31-Dec-32	30-Jun-33	31-Dec-33	30-Jun-34	31-Dec-34	30-Jun-35	31-Dec-35	30-Jun-36
2027	2028	2028	2029	2029	2030	2030	2031	2031	2032	2032	2033	2033	2034	2034	2035	2035	2036

Frontier Works Organization
SOT Dte

1-Jul-36	1-Jan-37	1-Jul-37	1-Jan-38	1-Jul-38	1-Jan-39	1-Jul-39	1-Jan-40	1-Jul-40	1-Jan-41	1-Jul-41	1-Jan-42	1-Jul-42	1-Jan-43	1-Jul-43	1-Jan-44	1-Jul-44	1-Jan-45
31-Dec-36	30-Jun-37	31-Dec-37	30-Jun-38	31-Dec-38	30-Jun-39	31-Dec-39	30-Jun-40	31-Dec-40	30-Jun-41	31-Dec-41	30-Jun-42	31-Dec-42	30-Jun-43	31-Dec-43	30-Jun-44	31-Dec-44	30-Jun-45
2036	2037	2037	2038	2038	2039	2039	2040	2040	2041	2041	2042	2042	2043	2043	2044	2044	2045

Frontier Works Organization
BOT DIG

1-Jul-45	1-Jan-46	1-Jul-46	1-Jan-47	1-Jul-47	1-Jan-48	1-Jul-48	1-Jan-49	1-Jul-49	1-Jan-50	1-Jul-50	1-Jan-51	1-Jul-51	1-Jan-52	1-Jul-52	1-Jan-53
31-Dec-45	30-Jun-46	31-Dec-46	30-Jun-47	31-Dec-47	30-Jun-48	31-Dec-48	30-Jun-49	31-Dec-49	30-Jun-50	31-Dec-50	30-Jun-51	31-Dec-51	30-Jun-52	31-Dec-52	30-Jun-53
2045	2046	2046	2047	2047	2048	2048	2049	2049	2050	2050	2051	2051	2052	2052	2053

Frontier Works Organi
BOT

Fixed Assets Schedule

Start Date		1-Jan-17	1-Feb-17	1-Mar-17	1-Apr-17	1-May-17	1-Jun-17	1-Jul-17	1-Aug-17	1-Sep-17	1-Oct-17
End Date	31-Dec-16	31-Jan-17	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17	31-Oct-17
Year		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
Asset Balance without Capitalized Interest											
Opening Balance		-	-	-	-	-	-	-	-	-	-
Periodic Opening Balance		-	-	-	-	-	-	-	-	-	-
Add: Land Acquistion Cost		-	-	-	-	-	-	-	-	-	-
Add: Capital Expenditures		-	-	-	-	-	-	-	-	-	-
Add: Mobilization Advance		-	-	-	-	-	-	-	-	-	-
Add: Development Expenditures		-	-	-	-	-	-	-	-	-	-
Depreciation Rate Annual		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Depreciation Rate Periodic		0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
Annual Depreciation on Plant		-	-	-	-	-	-	-	-	-	-
Periodic Depreciation on Plant		-	-	-	-	-	-	-	-	-	-
Accumulated Depreciation		-	-	-	-	-	-	-	-	-	-
Annual Net Plant Balance		-	-	-	-	-	-	-	-	-	-
Periodic Net Plant Balance		-	-	-	-	-	-	-	-	-	-
IDC Balance											
Opening Balance		-	-	-	-	-	-	-	-	-	-
Periodic Opening Balance		-	-	-	-	-	-	-	-	-	-
Add: Interest During Construction		-	-	-	-	-	-	-	-	-	-
Annual Depreciation Expense		-	-	-	-	-	-	-	-	-	-
Periodic Depreciation Expense		-	-	-	-	-	-	-	-	-	-
Accumulated Depreciation		-	-	-	-	-	-	-	-	-	-
Annual Net IDC Plant		-	-	-	-	-	-	-	-	-	-
Periodic Net IDC Plant		-	-	-	-	-	-	-	-	-	-
Financing Fee Balance											
Opening Balance		-	-	-	-	-	-	-	-	-	-
Periodic Opening Balance		-	-	-	-	-	-	-	-	-	-
Add: Arrangement Fee		-	-	-	-	-	-	-	-	-	-
Add: Agency Fee		-	-	-	-	-	-	-	-	-	-
Add: Commitment Fee		-	-	-	-	-	-	-	-	-	-
Fee Amortization Period		8	8	8	8	8	8	8	8	8	8
Fee Amortization Rate Annual		13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
Fee Amortization Rate Periodic		1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%
Annual Fee Amortization		-	-	-	-	-	-	-	-	-	-
Periodic Fee Amortization		-	-	-	-	-	-	-	-	-	-

Accumulated Fee Balance	-	-	-	-	-	-	-	-	-	-
Annual Net Fee Balance	-	-	-	-	-	-	-	-	-	-
Periodic Net Fee Balance	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Dte

1-Nov-17 30-Nov-17 2017	1-Dec-17 31-Dec-17 2017	1-Jan-18 31-Jan-18 2018	1-Feb-18 28-Feb-18 2018	1-Mar-18 31-Mar-18 2018	1-Apr-18 30-Apr-18 2018	1-May-18 31-May-18 2018	1-Jun-18 30-Jun-18 2018	1-Jul-18 31-Jul-18 2018	1-Aug-18 31-Aug-18 2018	1-Sep-18 30-Sep-18 2018	1-Oct-18 31-Oct-18 2018	1-Nov-18 30-Nov-18 2018	1-Dec-18 31-Dec-18 2018	1-Jan-19 31-Jan-19 2019	1-Feb-19 28-Feb-19 2019	1-Mar-19 31-Mar-19 2019	1-Apr-19 30-Apr-19 2019
-	-	-	84	96	108	119	131	143	155	167	179	191	203	215	226	238	250
-	-	-	84	96	108	119	131	143	155	167	179	191	203	215	226	238	250
-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-	-	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
-	-	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	84	96	108	119	131	143	155	167	179	191	203	215	226	238	250	262
-	-	84	96	108	119	131	143	155	167	179	191	203	215	226	238	250	262
-	-	-	-	-	-	-	-	3	3	3	3	3	3	8	8	8	8
-	-	-	-	-	-	-	-	3	3	3	3	3	3	8	8	8	8
-	-	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	3	3	3	3	3	3	8	8	8	8	8
-	-	-	-	-	-	-	3	3	3	3	3	3	8	8	8	8	8
-	-	-	12	12	12	12	12	19	19	19	19	19	19	27	27	27	27
-	-	-	12	12	12	12	12	19	19	19	19	19	19	27	27	27	27
-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	6	-	-	-	-	-	6	-	-	-	-
-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization BOT Dte

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	12	12	12	12	12	19	19	19	19	19	19	27	27	27	27	27
-	-	12	12	12	12	12	19	19	19	19	19	19	27	27	27	27	27

Frontier Works Organization

1-May-19 31-May-19 2019	1-Jun-19 30-Jun-19 2019	1-Jul-19 31-Jul-19 2019	1-Aug-19 31-Aug-19 2019	1-Sep-19 30-Sep-19 2019	1-Oct-19 31-Oct-19 2019	1-Nov-19 30-Nov-19 2019	1-Dec-19 31-Dec-19 2019	1-Jan-20 31-Jan-20 2020	1-Feb-20 29-Feb-20 2020	1-Mar-20 31-Mar-20 2020	1-Apr-20 30-Apr-20 2020	1-May-20 31-May-20 2020	1-Jun-20 30-Jun-20 2020	1-Jul-20 31-Jul-20 2020	1-Aug-20 31-Aug-20 2020	1-Sep-20 30-Sep-20 2020	1-Oct-20 31-Oct-20 2020
262	274	286	298	310	321	333	345	357	369	381	393	405	416	428	440	452	464
262	274	286	298	310	321	333	345	357	369	381	393	405	416	428	440	452	464
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%	0.83%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
274	286	298	310	321	333	345	357	369	381	393	405	416	428	440	452	464	476
274	286	298	310	321	333	345	357	369	381	393	405	416	428	440	452	464	476
8	8	16	16	16	16	16	16	25	25	25	25	25	25	37	37	37	37
8	8	16	16	16	16	16	16	25	25	25	25	25	25	37	37	37	37
-	7	-	-	-	-	-	10	-	-	-	-	-	12	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	16	16	16	16	16	16	25	25	25	25	25	25	37	37	37	37	37
8	16	16	16	16	16	16	25	25	25	25	25	25	37	37	37	37	37
27	27	36	36	36	36	36	36	46	46	46	46	46	46	56	56	56	56
27	27	36	36	36	36	36	36	46	46	46	46	46	46	56	56	56	56
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	6	-	-	-	-	-	6	-	-	-	-	-	6	-	-	-	-
-	3	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

27	36	36	36	36	36	36	46	46	46	46	46	46	56	56	56	56	56
27	36	36	36	36	36	36	46	46	46	46	46	46	56	56	56	56	56

[redacted]

1-Nov-20 30-Nov-20 2020	1-Dec-20 31-Dec-20 2020	1-Jan-21 30-Jun-21 2021	1-Jul-21 31-Dec-21 2021	1-Jan-22 30-Jun-22 2022	1-Jul-22 31-Dec-22 2022	1-Jan-23 30-Jun-23 2023	1-Jul-23 31-Dec-23 2023	1-Jan-24 30-Jun-24 2024	1-Jul-24 31-Dec-24 2024	1-Jan-25 30-Jun-25 2025	1-Jul-25 31-Dec-25 2025	1-Jan-26 30-Jun-26 2026	1-Jul-26 31-Dec-26 2026	1-Jan-27 30-Jun-27 2027	1-Jul-27 31-Dec-27 2027	1-Jan-28 30-Jun-28 2028	1-Jul-28 31-Dec-28 2028
476	488	500	500	450	450	405	405	364	364	328	328	295	295	266	266	239	239
476	488	500	475	451	428	407	387	367	349	331	315	299	284	270	256	244	231
0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
0.83%	0.83%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
-	-	-	50	-	45	-	40	-	36	-	33	-	30	-	27	-	24
-	-	25	24	23	21	20	19	18	17	17	16	15	14	13	13	12	12
-	-	-	50	50	95	95	135	135	172	172	205	205	234	234	261	261	285
488	500	500	450	450	405	405	364	364	328	328	295	295	266	266	239	239	215
488	500	475	451	428	407	387	367	349	331	315	299	284	270	256	244	231	220

37	37	52	52	46	46	42	42	38	38	34	34	30	30	27	27	25	25
37	37	52	49	46	44	42	40	38	36	34	32	31	29	28	26	25	24
-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	5	-	5	-	4	-	4	-	3	-	3	-	3	-	2
-	-	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1
-	-	-	5	5	10	10	14	14	18	18	21	21	24	24	27	27	29
37	52	52	46	46	42	42	38	38	34	34	30	30	27	27	25	25	22
37	52	49	46	44	42	40	38	36	34	32	31	29	28	26	25	24	23

56	56	66	66	58	58	50	50	41	41	33	33	25	25	17	17	8	8
56	56	66	62	58	54	50	46	41	37	33	29	25	21	17	12	8	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
1.04%	1.04%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
-	-	-	8	-	8	-	8	-	8	-	8	-	8	-	8	-	8
-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Frontier Works Organization

-	-	-	8	8	17	17	25	25	33	33	41	41	50	50	58	58	66
56	66	66	58	58	50	50	41	41	33	33	25	25	17	17	8	8	(0)
56	66	62	58	54	50	46	41	37	33	29	25	21	17	12	8	4	(0)

1-Jan-29	1-Jul-29	1-Jan-30	1-Jul-30	1-Jan-31	1-Jul-31	1-Jan-32	1-Jul-32	1-Jan-33	1-Jul-33	1-Jan-34	1-Jul-34	1-Jan-35	1-Jul-35	1-Jan-36	1-Jul-36	1-Jan-37	1-Jul-37
30-Jun-29	31-Dec-29	30-Jun-30	31-Dec-30	30-Jun-31	31-Dec-31	30-Jun-32	31-Dec-32	30-Jun-33	31-Dec-33	30-Jun-34	31-Dec-34	30-Jun-35	31-Dec-35	30-Jun-36	31-Dec-36	30-Jun-37	31-Dec-37
2029	2029	2030	2030	2031	2031	2032	2032	2033	2033	2034	2034	2035	2035	2036	2036	2037	2037
215	215	194	194	174	174	157	157	141	141	127	127	114	114	103	103	93	93
220	209	198	189	179	170	162	154	146	139	132	125	119	113	107	102	97	92
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
-	22	-	19	-	17	-	16	-	14	-	13	-	11	-	10	-	9
11	10	10	9	9	9	8	8	7	7	7	6	6	6	5	5	5	5
285	306	306	325	325	343	343	359	359	373	373	385	385	397	397	407	407	416
215	194	194	174	174	157	157	141	141	127	127	114	114	103	103	93	93	83
209	198	189	179	170	162	154	146	139	132	125	119	113	107	102	97	92	87
22	22	20	20	18	18	16	16	15	15	13	13	12	12	11	11	10	10
23	22	20	19	18	18	17	16	15	14	14	13	12	12	11	11	10	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	2	-	2	-	2	-	2	-	1	-	1	-	1	-	1	-	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
29	32	32	34	34	35	35	37	37	38	38	40	40	41	41	42	42	43
22	20	20	18	18	16	16	15	15	13	13	12	12	11	11	10	10	9
22	20	19	18	18	17	16	15	14	14	13	12	12	11	11	10	9	9
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization

Frontier Works Organization
807 Div

(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99

1-Jan-38 30-Jun-38 2038	1-Jul-38 31-Dec-38 2038	1-Jan-39 30-Jun-39 2039	1-Jul-39 31-Dec-39 2039	1-Jan-40 30-Jun-40 2040	1-Jul-40 31-Dec-40 2040	1-Jan-41 30-Jun-41 2041	1-Jul-41 31-Dec-41 2041	1-Jan-42 30-Jun-42 2042	1-Jul-42 31-Dec-42 2042	1-Jan-43 30-Jun-43 2043	1-Jul-43 31-Dec-43 2043	1-Jan-44 30-Jun-44 2044	1-Jul-44 31-Dec-44 2044	1-Jan-45 30-Jun-45 2045	1-Jul-45 31-Dec-45 2045	1-Jan-46 30-Jun-46 2046	1-Jul-46 31-Dec-46 2046
83	83	75	75	67	67	61	61	55	55	49	49	44	44	40	40	36	36
87	83	79	75	71	68	64	61	58	55	52	50	47	45	43	40	38	37
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
-	8	-	7	-	7	-	6	-	5	-	5	-	4	-	4	-	4
4	4	4	4	4	3	3	3	3	3	3	2	2	2	2	2	2	2
416	425	425	432	437	439	439	445	445	450	450	455	455	460	460	464	464	467
83	75	75	67	67	61	61	55	55	49	49	44	44	40	40	36	36	32
83	79	75	71	68	64	61	58	55	52	50	47	45	43	40	38	37	35
9	9	8	8	7	7	6	6	6	6	5	5	5	5	4	4	4	4
9	9	8	8	7	7	7	6	6	6	5	5	5	5	4	4	4	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	-	1	-	1	-	1	-	1	-	1	-	0	-	0	-	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	44	44	45	45	45	45	46	46	46	46	47	47	47	47	48	48	48
9	8	8	7	7	6	6	6	6	5	5	5	5	4	4	4	4	3
9	8	8	7	7	7	6	6	6	5	5	5	5	4	4	4	4	4
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

66	66	66	56	66	66	66	66	66	66	66	66	66	66	66	66	66	66
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Frontier Works Organization
BOT Dte

1-Jan-47	1-Jul-47	1-Jan-48	1-Jul-48	1-Jan-49	1-Jul-49	1-Jan-50	1-Jul-50	1-Jan-51	1-Jul-51	1-Jan-52	1-Jul-52	1-Jan-53	1-Jul-53	1-Jan-54	1-Jul-54	1-Jan-55	1-Jul-55
30-Jun-47	31-Dec-47	30-Jun-48	31-Dec-48	30-Jun-49	31-Dec-49	30-Jun-50	31-Dec-50	30-Jun-51	31-Dec-51	30-Jun-52	31-Dec-52	30-Jun-53	31-Dec-53	30-Jun-54	31-Dec-54	30-Jun-55	31-Dec-55
2047	2047	2048	2048	2049	2049	2050	2050	2051	2051	2052	2052	2053	2053	2054	2054	2055	2055
32	32	29	29	26	26	24	24	21	21	19	19	17	17	15	15	14	14
35	33	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
-	3	-	3	-	3	-	2	-	2	-	2	-	2	-	2	-	1
2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
467	471	471	474	474	476	476	478	478	481	481	482	482	484	484	486	486	487
32	29	29	26	26	24	24	21	21	19	19	17	17	15	15	14	14	13
33	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	1	1
4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0
0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	49	49	49	49	49	49	49	49	50	50	50	50	50	50	50	50	50
3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	1	1	1
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT-Dir

66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Works Organization

1-Jan-56	1-Jul-56	1-Jan-57	1-Jul-57	1-Jan-58	1-Jul-58	1-Jan-59	1-Jul-59	1-Jan-60	1-Jul-60	1-Jan-61	1-Jul-61	1-Jan-62	1-Jul-62	1-Jan-63
30-Jun-56	31-Dec-56	30-Jun-57	31-Dec-57	30-Jun-58	31-Dec-58	30-Jun-59	31-Dec-59	30-Jun-60	31-Dec-60	30-Jun-61	31-Dec-61	30-Jun-62	31-Dec-62	30-Jun-63
2056	2056	2057	2057	2058	2058	2059	2059	2060	2060	2061	2061	2062	2062	2063
13	13	11	11	10	10	9	9	8	8	7	7	7	7	6
31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
487	488	488	490	490	491	491	491	491	492	492	493	493	494	494
13	11	11	10	10	9	9	8	8	7	7	7	7	6	6
31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	50	50	50	50	51	51	51	51	51	51	51	51	51	51
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

7

Taxation

Start Date		1-Jan-17	1-Feb-17	1-Mar-17	1-Apr-17	1-May-17	1-Jun-17	1-Jul-17	1-Aug-17	1-Sep-17	1-Oct-17	1-Nov-17
End Date	31-Dec-16	31-Jan-17	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17	31-Oct-17	30-Nov-17
Year		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
EBT		-	-	-	-	-	-	-	-	-	-	-
Add:												
Depreciation		-	-	-	-	-	-	-	-	-	-	-
Less:												
Initial Depreciation		-	-	-	-	-	-	-	-	-	-	-
Taxable Depreciation		-	-	-	-	-	-	-	-	-	-	-
Taxable Profit/Loss		-	-	-	-	-	-	-	-	-	-	-
Cumulative Taxable Profit/Loss		-	-	-	-	-	-	-	-	-	-	-
Taxation @ 34% - (A)		-	-	-	-	-	-	-	-	-	-	-
Minimum Taxation @ 1% - (B)		-	-	-	-	-	-	-	-	-	-	-
Higher of (A) or (B) - (D)		-	-	-	-	-	-	-	-	-	-	-
Alternate Corporate Tax - (E)		-	-	-	-	-	-	-	-	-	-	-
Higher of (D) or (E)		-	-	-	-	-	-	-	-	-	-	-
Tax Shield												
Corporate Tax		-	-	-	-	-	-	-	-	-	-	-
Turnover Tax		-	-	-	-	-	-	-	-	-	-	-
Alternate Corporate Tax		-	-	-	-	-	-	-	-	-	-	-
Effective Tax		-	-	-	-	-	-	-	-	-	-	-
Effective Tax Code		1	1	1	1	1	1	1	1	1	1	1
Tax Shield - Corporate Tax		-	-	-	-	-	-	-	-	-	-	-
Tax Shield - Turnover Tax		-	-	-	-	-	-	-	-	-	-	-
Tax Shield - Alternate Corporate Tax		-	-	-	-	-	-	-	-	-	-	-
Effective Tax Shield		-	-	-	-	-	-	-	-	-	-	-

1-Dec-17 31-Dec-17 2017	1-Jan-18 31-Jan-18 2018	1-Feb-18 28-Feb-18 2018	1-Mar-18 31-Mar-18 2018	1-Apr-18 30-Apr-18 2018	1-May-18 31-May-18 2018	1-Jun-18 30-Jun-18 2018	1-Jul-18 31-Jul-18 2018	1-Aug-18 31-Aug-18 2018	1-Sep-18 30-Sep-18 2018	1-Oct-18 31-Oct-18 2018	1-Nov-18 30-Nov-18 2018	1-Dec-18 31-Dec-18 2018	1-Jan-19 31-Jan-19 2019	1-Feb-19 28-Feb-19 2019	1-Mar-19 31-Mar-19 2019	1-Apr-19 30-Apr-19 2019	1-May-19 31-May-19 2019
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization BOT Pro

1-Jun-19 30-Jun-19 2019	1-Jul-19 31-Jul-19 2019	1-Aug-19 31-Aug-19 2019	1-Sep-19 30-Sep-19 2019	1-Oct-19 31-Oct-19 2019	1-Nov-19 30-Nov-19 2019	1-Dec-19 31-Dec-19 2019	1-Jan-20 31-Jan-20 2020	1-Feb-20 29-Feb-20 2020	1-Mar-20 31-Mar-20 2020	1-Apr-20 30-Apr-20 2020	1-May-20 31-May-20 2020	1-Jun-20 30-Jun-20 2020	1-Jul-20 31-Jul-20 2020	1-Aug-20 31-Aug-20 2020	1-Sep-20 30-Sep-20 2020	1-Oct-20 31-Oct-20 2020	1-Nov-20 30-Nov-20 2020
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization BOT Dte

	1-Dec-20 31-Dec-20 2020	1-Jan-21 30-Jun-21 2021	1-Jul-21 31-Dec-21 2021	1-Jan-22 30-Jun-22 2022	1-Jul-22 31-Dec-22 2022	1-Jan-23 30-Jun-23 2023	1-Jul-23 31-Dec-23 2023	1-Jan-24 30-Jun-24 2024	1-Jul-24 31-Dec-24 2024	1-Jan-25 30-Jun-25 2025	1-Jul-25 31-Dec-25 2025	1-Jan-26 30-Jun-26 2026	1-Jul-26 31-Dec-26 2026	1-Jan-27 30-Jun-27 2027	1-Jul-27 31-Dec-27 2027	1-Jan-28 30-Jun-28 2028	1-Jul-28 31-Dec-28 2028	1-Jan-29 30-Jun-29 2029
	-	53	55	66	68	70	73	75	77	79	81	83	83	83	83	82	82	86
	-	32	30	29	28	27	25	24	23	22	22	21	70	19	18	18	17	12
	-	-	172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	32	30	29	28	27	25	24	23	22	22	21	20	19	18	18	17	12
	-	53	(117)	66	68	70	73	75	77	79	81	83	83	83	83	82	82	86
	-	53	(64)	2	70	141	214	288	366	445	526	609	691	774	857	939	1,020	1,107
	-	17	-	22	23	23	24	25	25	26	27	27	27	27	27	27	27	29
	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	-	17	1	22	23	23	24	25	25	26	27	27	27	27	27	27	27	29
	-	9	9	11	12	12	12	13	13	13	14	14	14	14	14	14	14	15
	-	17	9	22	23	23	24	25	25	26	27	27	27	27	27	27	27	29
	-	17	-	22	23	23	24	25	25	26	27	27	27	27	27	27	27	29
	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	-	9	9	11	12	12	12	13	13	13	14	14	14	14	14	14	14	15
	-	17	9	22	23	23	24	25	25	26	27	27	27	27	27	27	27	29
	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	-	11	10	9	8	7	6	5	3	2	1	-	-	-	-		-	-
	-	17	16	14	12	10	9	7	5	3	1	-	-	-	-	-	-	-
	-	17	16	14	12	10	9	7	5	3	1	-	-	-	-	-	-	-
	-	11	16	9	8	7	6	5	3	2	1	-	-	-	-	-	-	-

1-Jul-29 31-Dec-29 2029	1-Jan-30 30-Jun-30 2030	1-Jul-30 31-Dec-30 2030	1-Jan-31 30-Jun-31 2031	1-Jul-31 31-Dec-31 2031	1-Jan-32 30-Jun-32 2032	1-Jul-32 31-Dec-32 2032	1-Jan-33 30-Jun-33 2033	1-Jul-33 31-Dec-33 2033	1-Jan-34 30-Jun-34 2034	1-Jul-34 31-Dec-34 2034	1-Jan-35 30-Jun-35 2035	1-Jul-35 31-Dec-35 2035	1-Jan-36 30-Jun-36 2036	1-Jul-36 31-Dec-36 2036	1-Jan-37 30-Jun-37 2037	1-Jul-37 31-Dec-37 2037	1-Jan-38 30-Jun-38 2038
86	86	85	(10)	(14)	83	82	81	80	79	77	76	75	73	72	70	68	66
12	11	10	10	9	9	8	8	8	7	7	7	6	6	6	5	5	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	11	10	10	9	9	8	8	8	7	7	7	6	6	6	5	5	5
86	86	85	(10)	(14)	83	82	81	80	79	77	76	75	73	72	70	68	66
1,193	1,279	1,364	1,354	1,340	1,423	1,505	1,585	1,665	1,743	1,821	1,897	1,971	2,044	2,116	2,186	2,254	2,319
28	28	28	(3)	(5)	27	27	27	26	26	26	25	25	24	24	23	22	22
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	28	28	1	1	27	27	27	26	26	26	25	25	24	24	23	22	22
15	15	14	(2)	(2)	14	14	14	14	13	13	13	13	12	12	12	12	11
28	28	28	1	1	27	27	27	26	26	26	25	25	24	24	23	22	22
28	28	28	(3)	(5)	27	27	27	26	26	26	25	25	24	24	23	22	22
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	15	14	(2)	(2)	14	14	14	14	13	13	13	13	12	12	12	12	11
28	28	28	1	1	27	27	27	26	26	16	25	25	24	24	23	22	22
1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1-Jul-38 31-Dec-38 2038	1-Jan-39 30-Jun-39 2039	1-Jul-39 31-Dec-39 2039	1-Jan-40 30-Jun-40 2040	1-Jul-40 31-Dec-40 2040	1-Jan-41 30-Jun-41 2041	1-Jul-41 31-Dec-41 2041	1-Jan-42 30-Jun-42 2042	1-Jul-42 31-Dec-42 2042	1-Jan-43 30-Jun-43 2043	1-Jul-43 31-Dec-43 2043	1-Jan-44 30-Jun-44 2044	1-Jul-44 31-Dec-44 2044	1-Jan-45 30-Jun-45 2045	1-Jul-45 31-Dec-45 2045	1-Jan-46 30-Jun-46 2046	1-Jul-46 31-Dec-46 2046	1-Jan-47 30-Jun-47 2047
64	61	59	57	55	52	49	46	43	39	36	33	29	25	21	17	12	7
5	4	4	4	4	4	3	3	3	3	3	3	2	2	2	2	2	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	4	4	4	4	4	3	3	3	3	3	3	2	2	2	2	2	2
64	61	59	57	55	52	49	46	43	39	36	33	29	25	21	17	12	7
2,383	**2,445**	**2,504**	**2,561**	**2,615**	**2,667**	**2,716**	**2,762**	**2,806**	**2,845**	**2,881**	**2,914**	**2,943**	**2,967**	**2,988**	**3,005**	**3,017**	**3,024**
21	20	20	19	18	17	16	15	14	13	12	11	10	8	7	5	4	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21	**20**	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**8**	**7**	**5**	**4**	**2**
11	10	10	10	9	9	8	8	7	7	6	6	5	4	4	3	2	1
21	**20**	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**8**	**7**	**5**	**4**	**2**
21	20	20	19	18	17	16	15	14	13	12	11	10	8	7	5	4	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	10	10	10	9	9	8	8	7	7	6	6	5	4	4	3	2	1
21	20	20	19	18	17	16	15	14	13	12	11	10	8	7	5	4	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1-Jul-47 31-Dec-47 2047	1-Jan-48 30-Jun-48 2048	1-Jul-48 31-Dec-48 2048	1-Jan-49 30-Jun-49 2049	1-Jul-49 31-Dec-49 2049	1-Jan-50 30-Jun-50 2050	1-Jul-50 31-Dec-50 2050	1-Jan-51 30-Jun-51 2051	1-Jul-51 31-Dec-51 2051	1-Jan-52 30-Jun-52 2052	1-Jul-52 31-Dec-52 2052	1-Jan-53 30-Jun-53 2053	1-Jul-53 31-Dec-53 2053	1-Jan-54 30-Jun-54 2054	1-Jul-54 31-Dec-54 2054	1-Jan-55 30-Jun-55 2055	1-Jul-55 31-Dec-55 2055	1-Jan-56 30-Jun-56 2056
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1-Jul-56 31-Dec-56 2056	1-Jan-57 30-Jun-57 2057	1-Jul-57 31-Dec-57 2057	1-Jan-58 30-Jun-58 2058	1-Jul-58 31-Dec-58 2058	1-Jan-59 30-Jun-59 2059	1-Jul-59 31-Dec-59 2059	1-Jan-60 30-Jun-60 2060	1-Jul-60 31-Dec-60 2060	1-Jan-61 30-Jun-61 2061	1-Jul-61 31-Dec-61 2061	1-Jan-62 30-Jun-62 2062	1-Jul-62 31-Dec-62 2062	1-Jan-63 30-Jun-63 2063
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026	3,026
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1	1	1	1	1	1	1	1	1	1	1	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

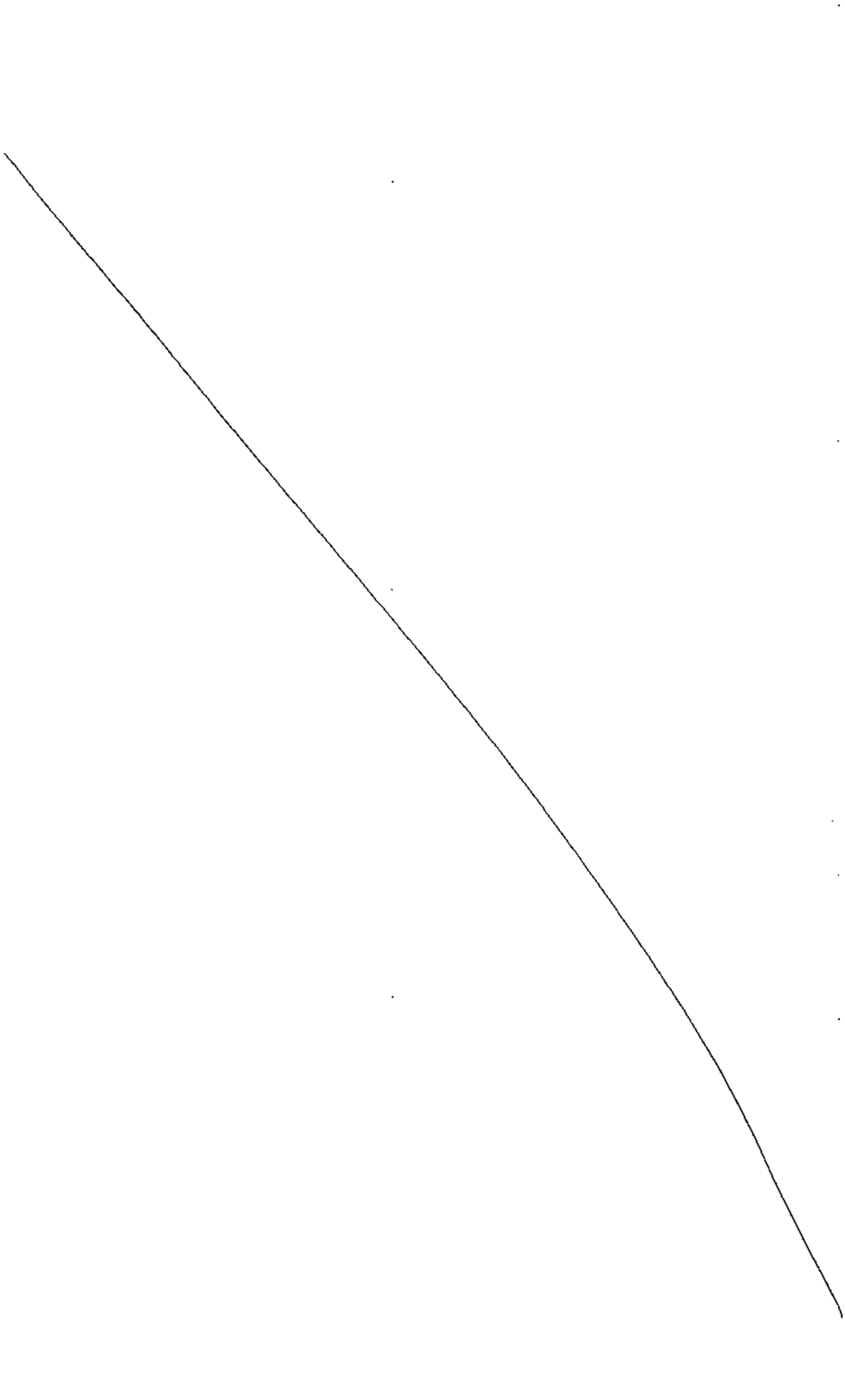
Project Accounts

Start Date			1-Jan-17	1-Feb-17	1-Mar-17	1-Apr-17	1-May-17	1-Jun-17	1-Jul-17	1-Aug-17	1-Sep-17	1-Oct-17	1-Nov-17
End Date		31-Dec-16	31-Jan-17	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17	31-Oct-17	30-Nov-17
Year			2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
Debt Service Reserve Account													
Total Required DSRA This Period			-	-	-	-	-	-	-	-	-	-	-
Computed Debt Service Next Period			-	-	-	-	-	-	-	-	-	-	-
Total Debt Service in Next Period			-	-	-	-	-	-	-	-	-	-	-
Total Required DSRA			-	-	-	-	-	-	-	-	-	-	-
Required DSRA at COD	**70**		-	-	-	-	-	-	-	-	-	-	-
Less: Opening Balance of DSRA			-	-	-	-	-	-	-	-	-	-	-
Required DSRA Funding			-	-	-	-	-	-	-	-	-	-	-
Opening Balance			-	-	-	-	-	-	-	-	-	-	-
Add: DSRA Funded			-	-	-	-	-	-	-	-	-	-	-
Closing Balance			-	-	-	-	-	-	-	-	-	-	-
Pre-COD Operating Account													
Opening Balance													
Add: Debt Proceeds													
Add: Equity Injection													
Less:													
Land Cost													
Construction Expenditures													
Mobilization													
Development Expenditure *Financed*													
IDC Paid													
Financing Cost & Fees													
DSRA													
Closing Balance													
Operating Account													
Opening Balance													
Add: Revenue													
Less:													
OPEX													
Periodic Maintenance													
Taxes													
Debt Repayments													
Transfers to DSRA & MRA													

Frontier Works Organization BOT Dte

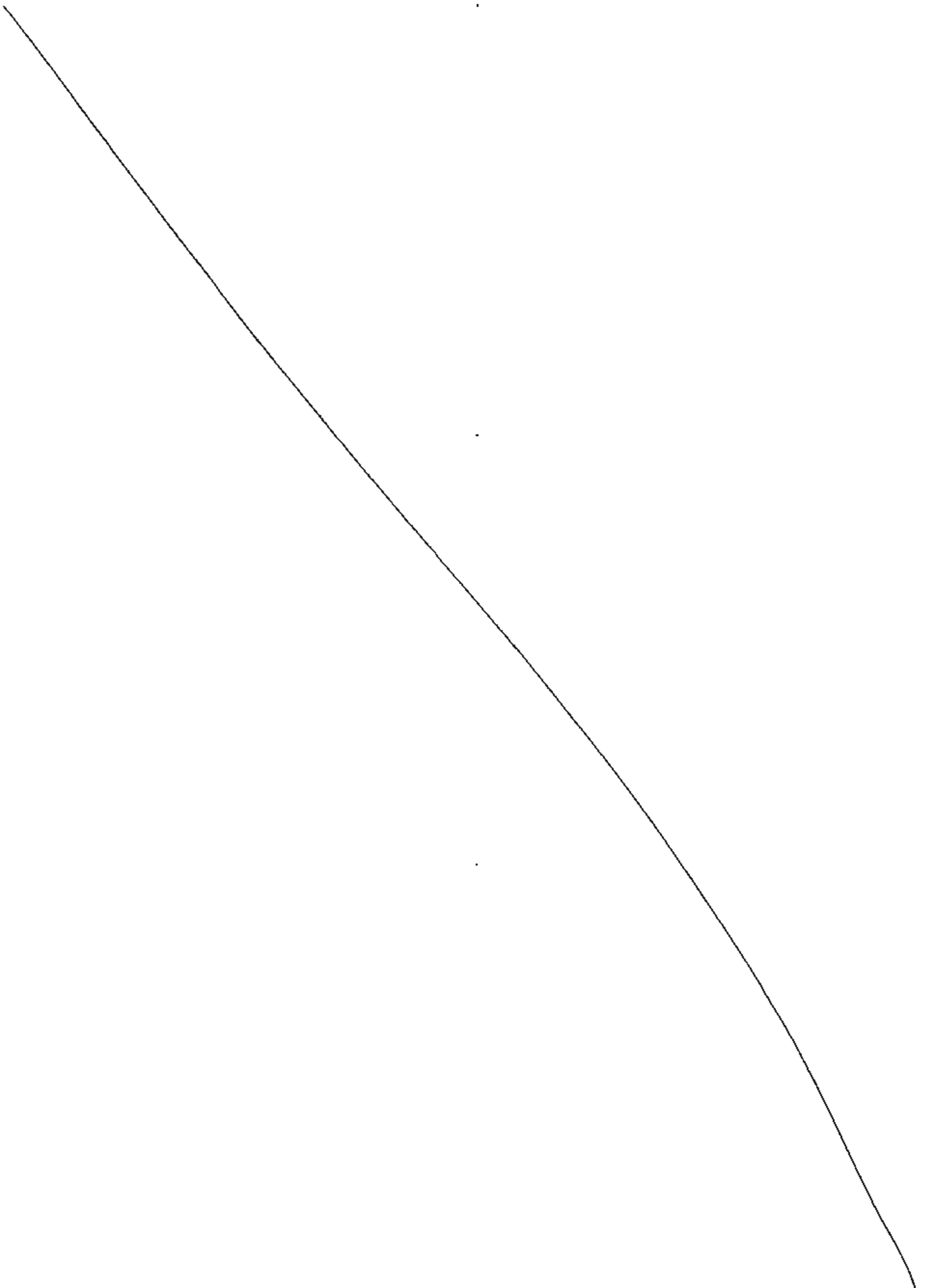
Closing Balance

1-Dec-17 31-Dec-17 2017	1-Jan-18 31-Jan-18 2018	1-Feb-18 28-Feb-18 2018	1-Mar-18 31-Mar-18 2018	1-Apr-18 30-Apr-18 2018	1-May-18 31-May-18 2018	1-Jun-18 30-Jun-18 2018	1-Jul-18 31-Jul-18 2018	1-Aug-18 31-Aug-18 2018	1-Sep-18 30-Sep-18 2018	1-Oct-18 31-Oct-18 2018	1-Nov-18 30-Nov-18 2018	1-Dec-18 31-Dec-18 2018	1-Jan-19 31-Jan-19 2019	1-Feb-19 28-Feb-19 2019	1-Mar-19 31-Mar-19 2019	1-Apr-19 30-Apr-19 2019	1-May-19 31-May-19 2019
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



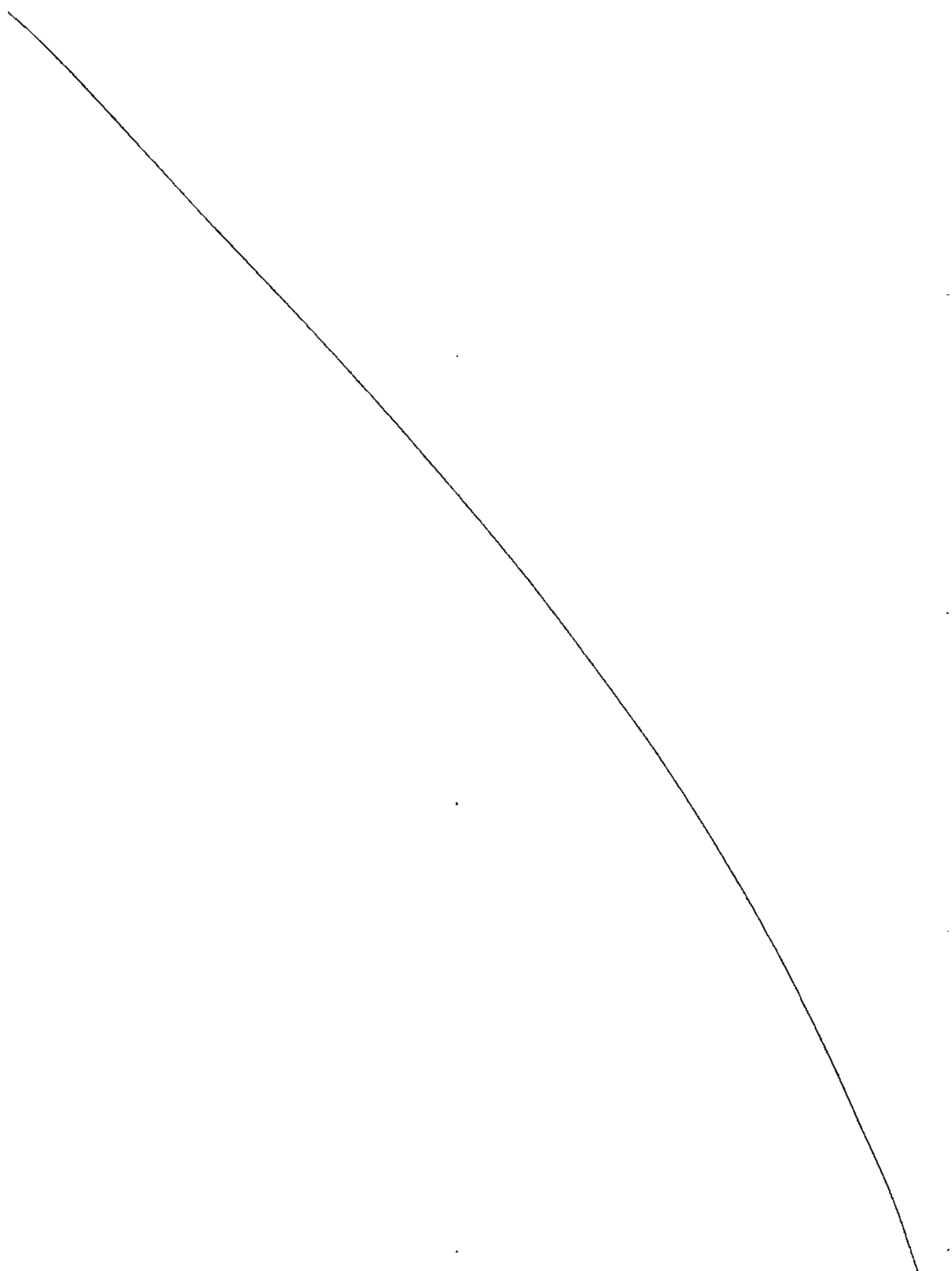
1-Jun-19 30-Jun-19 2019	1-Jul-19 31-Jul-19 2019	1-Aug-19 31-Aug-19 2019	1-Sep-19 30-Sep-19 2019	1-Oct-19 31-Oct-19 2019	1-Nov-19 30-Nov-19 2019	1-Dec-19 31-Dec-19 2019	1-Jan-20 31-Jan-20 2020	1-Feb-20 29-Feb-20 2020	1-Mar-20 31-Mar-20 2020	1-Apr-20 30-Apr-20 2020	1-May-20 31-May-20 2020	1-Jun-20 30-Jun-20 2020	1-Jul-20 31-Jul-20 2020	1-Aug-20 31-Aug-20 2020	1-Sep-20 30-Sep-20 2020	1-Oct-20 31-Oct-20 2020	1-Nov-20 30-Nov-20 2020
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Dir



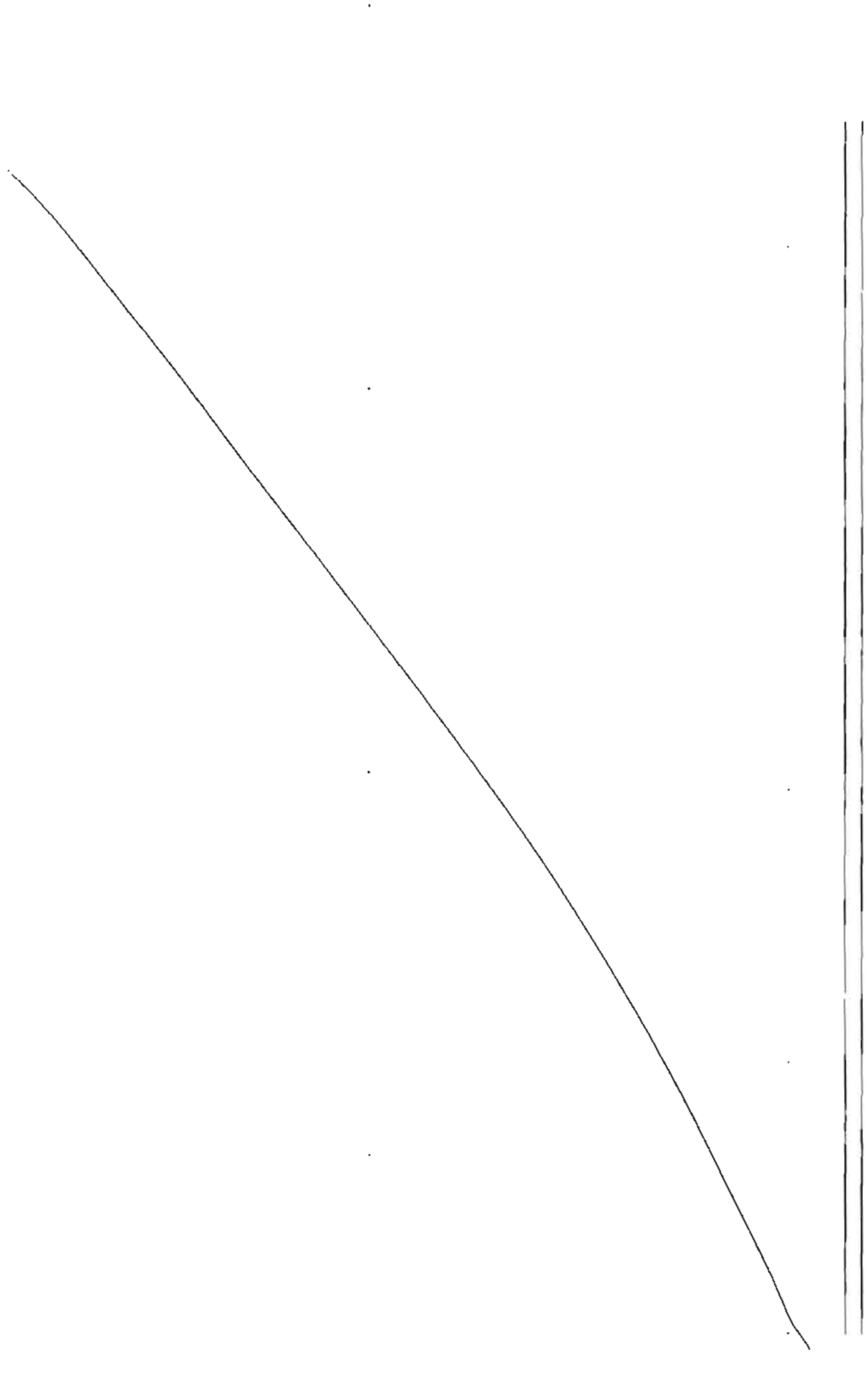
1-Dec-20 31-Dec-20 2020	1-Jan-21 30-Jun-21 2021	1-Jul-21 31-Dec-21 2021	1-Jan-22 30-Jun-22 2022	1-Jul-22 31-Dec-22 2022	1-Jan-23 30-Jun-23 2023	1-Jul-23 31-Dec-23 2023	1-Jan-24 30-Jun-24 2024	1-Jul-24 31-Dec-24 2024	1-Jan-25 30-Jun-25 2025	1-Jul-25 31-Dec-25 2025	1-Jan-26 30-Jun-26 2026	1-Jul-26 31-Dec-26 2026	1-Jan-27 30-Jun-27 2027	1-Jul-27 31-Dec-27 2027	1-Jan-28 30-Jun-28 2028	1-Jul-28 31-Dec-28 2028	1-Jan-29 30-Jun-29 2029
-	70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-
70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-	-
70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-	-
70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-	-
70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-
70	6	(4)	(1)	(1)	(1)	(1)	(1)	(1)	(17)	(49)	-	-	-	-	-	-	-
-	70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-
70	6	(4)	(1)	(1)	(1)	(1)	(1)	(1)	(17)	(49)	-	-	-	-	-	-	-
70	76	73	71	70	69	68	67	66	49	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Dte

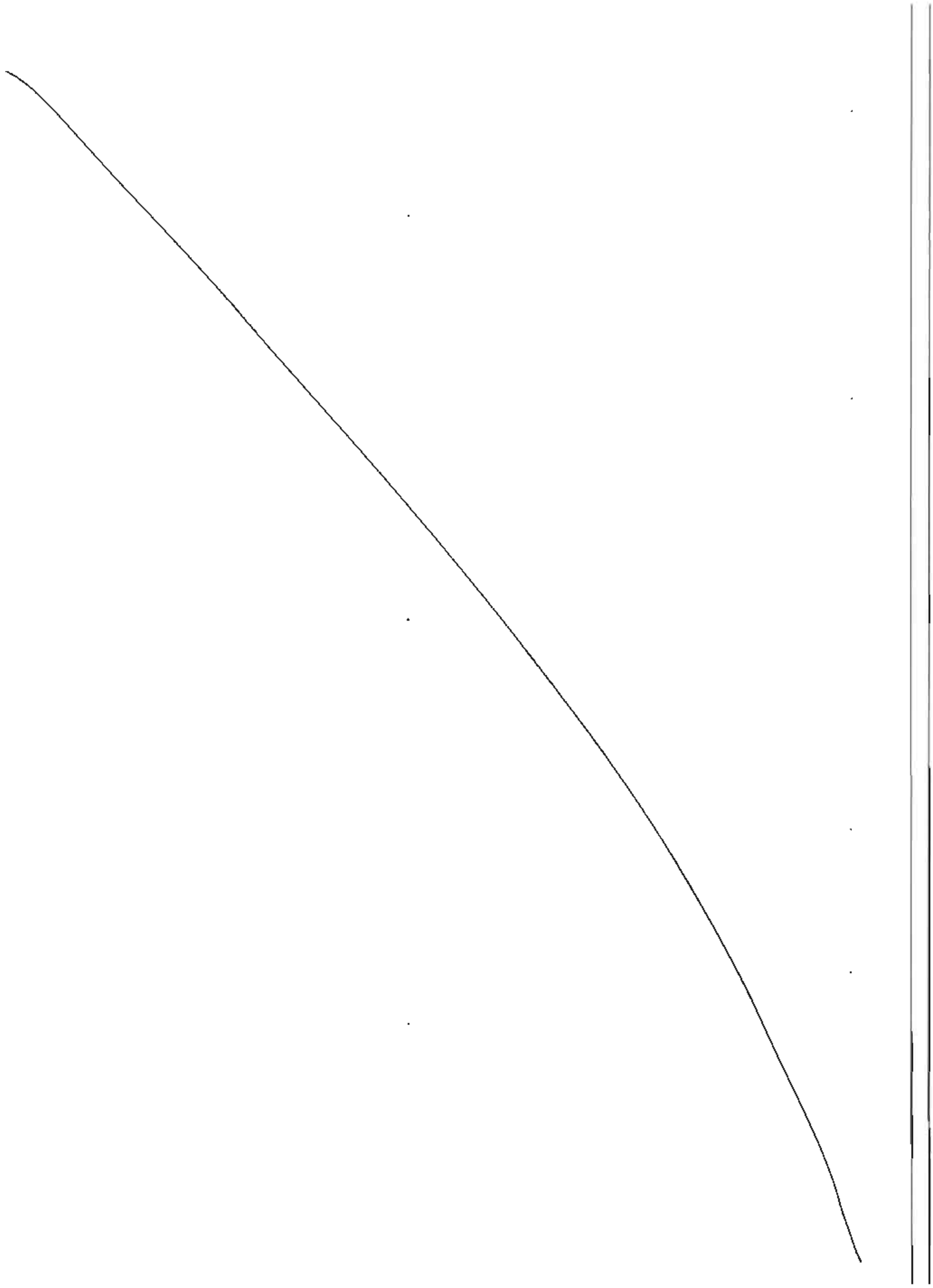


1-Jul-29 31-Dec-29 2029	1-Jan-30 30-Jun-30 2030	1-Jul-30 31-Dec-30 2030	1-Jan-31 30-Jun-31 2031	1-Jul-31 31-Dec-31 2031	1-Jan-32 30-Jun-32 2032	1-Jul-32 31-Dec-32 2032	1-Jan-33 30-Jun-33 2033	1-Jul-33 31-Dec-33 2033	1-Jan-34 30-Jun-34 2034	1-Jul-34 31-Dec-34 2034	1-Jan-35 30-Jun-35 2035	1-Jul-35 31-Dec-35 2035	1-Jan-36 30-Jun-36 2036	1-Jul-36 31-Dec-36 2036	1-Jan-37 30-Jun-37 2037	1-Jul-37 31-Dec-37 2037	1-Jan-38 30-Jun-38 2038
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

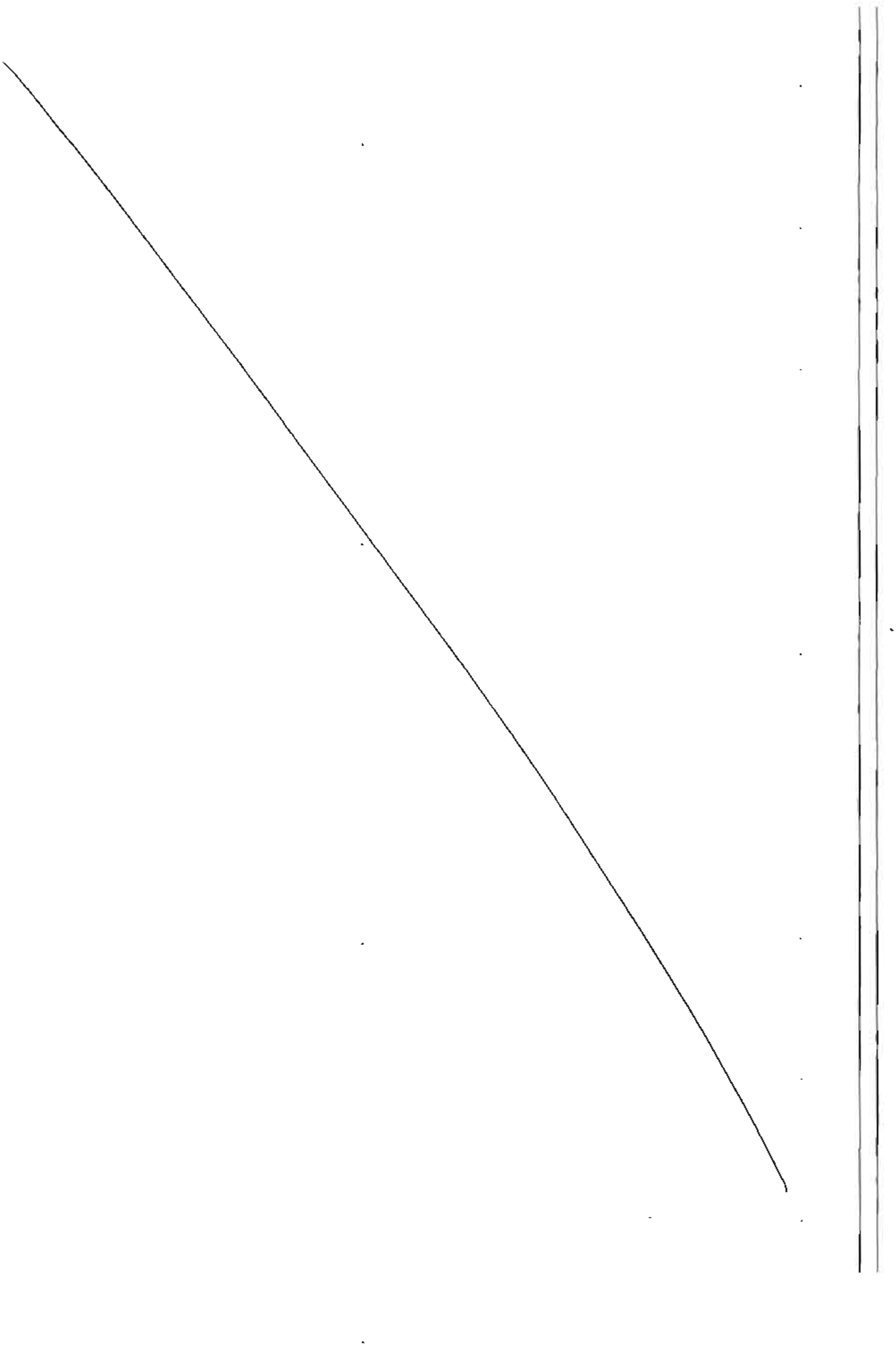
Frontier Works Organization
BOT Dte



1-Jul-38 31-Dec-38 2038	1-Jan-39 30-Jun-39 2039	1-Jul-39 31-Dec-39 2039	1-Jan-40 30-Jun-40 2040	1-Jul-40 31-Dec-40 2040	1-Jan-41 30-Jun-41 2041	1-Jul-41 31-Dec-41 2041	1-Jan-42 30-Jun-42 2042	1-Jul-42 31-Dec-42 2042	1-Jan-43 30-Jun-43 2043	1-Jul-43 31-Dec-43 2043	1-Jan-44 30-Jun-44 2044	1-Jul-44 31-Dec-44 2044	1-Jan-45 30-Jun-45 2045	1-Jul-45 31-Dec-45 2045	1-Jan-46 30-Jun-46 2046	1-Jul-46 31-Dec-46 2046	1-Jan-47 30-Jun-47 2047
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-						-					-						-



1-Jul-47	1-Jan-48	1-Jul-48	1-Jan-49	1-Jul-49	1-Jan-50	1-Jul-50	1-Jan-51	1-Jul-51	1-Jan-52	1-Jul-52	1-Jan-53	1-Jul-53	1-Jan-54	1-Jul-54	1-Jan-55	1-Jul-55	1-Jan-56
31-Dec-47	30-Jun-48	31-Dec-48	30-Jun-49	31-Dec-49	30-Jun-50	31-Dec-50	30-Jun-51	31-Dec-51	30-Jun-52	31-Dec-52	30-Jun-53	31-Dec-53	30-Jun-54	31-Dec-54	30-Jun-55	31-Dec-55	30-Jun-56
2047	2048	2048	2049	2049	2050	2050	2051	2051	2052	2052	2053	2053	2054	2054	2055	2055	2056
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



1-Jul-56 31-Dec-56 2056	1-Jan-57 30-Jun-57 2057	1-Jul-57 31-Dec-57 2057	1-Jan-58 30-Jun-58 2058	1-Jul-58 31-Dec-58 2058	1-Jan-59 30-Jun-59 2059	1-Jul-59 31-Dec-59 2059	1-Jan-60 30-Jun-60 2060	1-Jul-60 31-Dec-60 2060	1-Jan-61 30-Jun-61 2061	1-Jul-61 31-Dec-61 2061	1-Jan-62 30-Jun-62 2062	1-Jul-62 31-Dec-62 2062	1-Jan-63 30-Jun-63 2063
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

Ratios

Start Date		1-Jan-17	1-Feb-17	1-Mar-17	1-Apr-17	1-May-17	1-Jun-17	1-Jul-17	1-Aug-17	1-Sep-17	1-Oct-17	1-Nov-17
End Date	31-Dec-16	31-Jan-17	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17	31-Oct-17	30-Nov-17
Year		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
Debt Service Coverage Ratio												
CFADS		-	-	-	-	-	-	-	-	-	-	-
Principal Repayment		-	-	-	-	-	-	-	-	-	-	-
Interest		-	-	-	-	-	-	-	-	-	-	-
Debt Due		-	-	-	-	-	-	-	-	-	-	-
DSCR												
Loan Life Coverage Ratio												
CFADS		-	-	-	-	-	-	-	-	-	-	-
CFADS during Loan Life		-	-	-	-	-	-	-	-	-	-	-
Cost of Debt		5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Discounted Cashflows		815	819	823	827	831	835	839	843	847	851	855
Outstanding Debt Balance		-	-	-	-	-	-	-	-	-	-	-
LLCR												
Project Life Coverage Ratio												
CFADS		-	-	-	-	-	-	-	-	-	-	-
CFADS during Project Life		-	-	-	-	-	-	-	-	-	-	-
Cost of Debt		5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
Discounted Cashflows		1,333	1,339	1,346	1,352	1,358	1,365	1,371	1,378	1,385	1,391	1,398
Outstanding Debt Balance		-	-	-	-	-	-	-	-	-	-	-
PLCR												
Current Ratio												
Current Assets		-	-	-	-	-	-	-	-	-	-	-
Current Liabilities		-	-	-	-	-	-	-	-	-	-	-
Current Ratio												
		-	-	-	-	-	-	-	-	-	-	-
Leverage Ratio		-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization

1-Dec-17 31-Dec-17 2017	1-Jan-18 31-Jan-18 2018	1-Feb-18 28-Feb-18 2018	1-Mar-18 31-Mar-18 2018	1-Apr-18 30-Apr-18 2018	1-May-18 31-May-18 2018	1-Jun-18 30-Jun-18 2018	1-Jul-18 31-Jul-18 2018	1-Aug-18 31-Aug-18 2018	1-Sep-18 30-Sep-18 2018	1-Oct-18 31-Oct-18 2018	1-Nov-18 30-Nov-18 2018	1-Dec-18 31-Dec-18 2018	1-Jan-19 31-Jan-19 2019	1-Feb-19 28-Feb-19 2019	1-Mar-19 31-Mar-19 2019	1-Apr-19 30-Apr-19 2019
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
859	863	867	871	875	880	884	888	892	897	901	905	909	914	918	922	927
-	81	91	101	111	122	140	151	161	171	181	191	212	223	233	243	253
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
1,405	1,411	1,418	1,425	1,431	1,438	1,445	1,452	1,459	1,466	1,473	1,480	1,487	1,494	1,501	1,508	1,515
-	81	91	101	111	122	140	151	161	171	181	191	212	223	233	243	253
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization BOT Plc

[redacted]

1-May-19 31-May-19 2019	1-Jun-19 30-Jun-19 2019	1-Jul-19 31-Jul-19 2019	1-Aug-19 31-Aug-19 2019	1-Sep-19 30-Sep-19 2019	1-Oct-19 31-Oct-19 2019	1-Nov-19 30-Nov-19 2019	1-Dec-19 31-Dec-19 2019	1-Jan-20 31-Jan-20 2020	1-Feb-20 29-Feb-20 2020	1-Mar-20 31-Mar-20 2020	1-Apr-20 30-Apr-20 2020	1-May-20 31-May-20 2020	1-Jun-20 30-Jun-20 2020	1-Jul-20 31-Jul-20 2020	1-Aug-20 31-Aug-20 2020	1-Sep 20 30-Sep-20 2020
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
931	936	940	945	949	954	958	963	968	972	977	981	986	991	995	1,000	1,005
263	287	297	307	317	327	338	364	374	384	394	404	414	443	453	463	474
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
1,523	1,530	1,537	1,545	1,552	1,559	1,567	1,574	1,582	1,589	1,597	1,604	1,612	1,620	1,628	1,636	1,643
263	287	297	307	317	327	338	364	374	384	394	404	414	443	453	463	474
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Die

1-Oct-20 31-Oct-20 2020	1-Nov-20 30-Nov-20 2020	1-Dec-20 31-Dec-20 2020	1-Jan-21 30-Jun-21 2021	1-Jul-21 31-Dec-21 2021	1-Jan-22 30-Jun-22 2022	1-Jul-22 31-Dec-22 2022	1-Jan-23 30-Jun-23 2023	1-Jul-23 31-Dec-23 2023	1-Jan-24 30-Jun-24 2024	1-Jul-24 31-Dec-24 2024	1-Jan-25 30-Jun-25 2025	1-Jul-25 31-Dec-25 2025	1-Jan-26 30-Jun-26 2026	1-Jul-26 31-Dec-26 2026	1-Jan-27 30-Jun-27 2027	1-Jul-27 31-Dec-27 2027
-	-	70	84	92	87	86	84	83	81	80	79	77	76	75	74	74
-	-	-	53	61	59	59	60	60	61	62	62	47	-	-	-	-
-	-	-	17	16	14	12	10	9	7	5	3	1	-	-	-	-
-	-	-	70	76	73	71	70	69	68	67	66	49	-	-	-	-
			1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.58				
-	-	70	84	92	87	86	84	83	81	80	79	77	76	75	74	74
-	-	-	84	92	87	86	84	83	81	80	79	77	76	75	74	74
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
1,010	1,015	1,020	1,049	993	927	864	801	738	674	610	545	480	414	348	280	212
484	494	585	532	471	412	353	293	233	171	110	47	-	-	-	-	-
			1.97	2.11	2.25	2.45	2.73	3.17	3.93	5.56	11.49					
-	-	70	84	92	87	86	84	83	81	80	79	77	76	75	74	74
-	-	-	84	92	87	86	84	83	81	80	79	77	76	75	74	74
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
1,651	1,659	1,667	1,715	1,678	1,632	1,550	1,548	1,506	1,464	1,423	1,382	1,341	1,300	1,260	1,218	1,177
484	494	585	532	471	412	353	293	233	171	110	47	-	-	-	-	-
			3.23	3.56	3.96	4.51	5.28	6.48	8.54	12.97	29.14					
-	-	70	84	99	114	128	142	156	170	183	196	225	301	376	450	524
-	-	53	61	59	59	60	60	61	62	62	47	-	-	-	-	-
			1.38	1.69	1.92	2.15	2.36	2.56	2.75	2.94	4.14					
-	-	-	1.38	1.69	1.92	2.15	2.36	2.56	2.75	2.94	4.14	-	-	-	-	-
-	-	-	3.84	2.56	1.80	1.29	0.91	0.63	0.41	0.23	0.09	-	-	-	-	-

Frontier Works Organization
BOT Dte

1-Jan-28 30-Jun-28 2028	1-Jul-28 31-Dec-28 2028	1-Jan-29 30-Jun-29 2029	1-Jul-29 31-Dec-29 2029	1-Jan-30 30-Jun-30 2030	1-Jul-30 31-Dec-30 2030	1-Jan-31 30-Jun-31 2031	1-Jul-31 31-Dec-31 2031	1-Jan-32 30-Jun-32 2032	1-Jul-32 31-Dec-32 2032	1-Jan-33 30-Jun-33 2033	1-Jul-33 31-Dec-33 2033	1-Jan-34 30-Jun-34 2034	1-Jul-34 31-Dec-34 2034	1-Jan-35 30-Jun-35 2035	1-Jul-35 31-Dec-35 2035	1-Jan-36 30-Jun-36 2036
73	72	70	69	68	67	(2)	(6)	65	63	62	61	60	59	57	56	55
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	72	70	69	68	67	(2)	(6)	65	63	62	61	60	59	57	56	55
73	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
142	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	72	70	69	68	67	(2)	(6)	65	63	62	61	60	59	57	56	55
73	72	70	69	68	67	(2)	(6)	65	63	62	61	60	59	57	56	55
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
1,135	1,094	1,052	1,010	968	926	883	910	943	904	865	826	787	748	709	671	633
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
597	668	738	808	876	943	942	936	1,000	1,064	1,126	1,187	1,247	1,305	1,363	1,419	1,474
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Div

1-Jul-36 31-Dec-36 2036	1-Jan-37 30-Jun-37 2037	1-Jul-37 31-Dec-37 2037	1-Jan-38 30-Jun-38 2038	1-Jul-38 31-Dec-38 2038	1-Jan-39 30-Jun-39 2039	1-Jul-39 31-Dec-39 2039	1-Jan-40 30-Jun-40 2040	1-Jul-40 31-Dec-40 2040	1-Jan-41 30-Jun-41 2041	1-Jul-41 31-Dec-41 2041	1-Jan-42 30-Jun-42 2042	1-Jul-42 31-Dec-42 2042	1-Jan-43 30-Jun-43 2043	1-Jul-43 31-Dec-43 2043	1-Jan-44 30-Jun-44 2044	1-Jul-44 31-Dec-44 2044
54	52	51	49	47	46	44	42	40	38	36	34	32	29	27	24	22
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	52	51	49	47	46	44	42	40	38	36	34	32	29	27	24	22
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	52	51	49	47	46	44	42	40	38	36	34	32	29	27	24	22
54	52	51	49	47	46	44	42	40	38	36	34	32	29	27	24	22
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
594	556	519	482	446	410	375	341	307	274	243	213	184	156	131	107	85
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,527	1,580	1,630	1,679	1,726	1,772	1,816	1,858	1,898	1,936	1,973	2,007	2,039	2,068	2,095	2,119	2,141
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Dte

1-Jan-45 30-Jun-45 2045	1-Jul-45 31-Dec-45 2045	1-Jan-46 30-Jun-46 2046	1-Jul-46 31-Dec-46 2046	1-Jan-47 30-Jun-47 2047	1-Jul-47 31-Dec-47 2047	1-Jan-48 30-Jun-48 2048	1-Jul-48 31-Dec-48 2048	1-Jan-49 30-Jun-49 2049	1-Jul-49 31-Dec-49 2049	1-Jan-50 30-Jun-50 2050	1-Jul-50 31-Dec-50 2050	1-Jan-51 30-Jun-51 2051	1-Jul-51 31-Dec-51 2051	1-Jan-52 30-Jun-52 2052	1-Jul-52 31-Dec-52 2052	1-Jan-53 30-Jun-53 2053
19	16	13	10	7	3	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	16	13	10	7	3	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	16	13	10	7	3	-	-	-	-	-	-	-	-	-	-	-
19	16	13	10	7	3	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
65	47	32	19	9	3	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,160	2,176	2,189	2,200	2,206	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Frontier Works Organization
BOT Dte

1-Jul-53 31-Dec-53 2053	1-Jan-54 30-Jun-54 2054	1-Jul-54 31-Dec-54 2054	1-Jan-55 30-Jun-55 2055	1-Jul-55 31-Dec-55 2055	1-Jan-56 30-Jun-56 2056	1-Jul-56 31-Dec-56 2056	1-Jan-57 30-Jun-57 2057	1-Jul-57 31-Dec-57 2057	1-Jan-58 30-Jun-58 2058	1-Jul-58 31-Dec-58 2058	1-Jan-59 30-Jun-59 2059	1-Jul-59 31-Dec-59 2059	1-Jan-60 30-Jun-60 2060	1-Jul-60 31-Dec-60 2060	1-Jan-61 30-Jun-61 2061	1-Jul-61 31-Dec-61 2061
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%	5.87%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209	2,209
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1-Jan-62 30-Jun-62 2062	1-Jul-62 31-Dec-62 2062	1-Jan-63 30-Jun-63 2063
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
5.87%	5.87%	5.87%
-	-	-
-	-	-
-	-	-
-	-	-
5.87%	5.87%	5.87%
-	-	-
-	-	-
2,209	2,209	2,209
-	-	-
-	-	-
-	-	-

Timing

Start Date			1-Jan-17	1-Feb-17	1-Mar-17	1-Apr-17	1-May-17	1-Jun-17	1-Jul-17	1-Aug-17	1-Sep-17
End Date		31-Dec-16	31-Jan-17	28-Feb-17	31-Mar-17	30-Apr-17	31-May-17	30-Jun-17	31-Jul-17	31-Aug-17	30-Sep-17
Year			2017	2017	2017	2017	2017	2017	2017	2017	2017

Description	Unit	Value
Start of Development	Date	1-Jan-17
Development Period	Months	6
Project Award	Date	1-Jul-17
Financial Close Period	Months	6
Financial Close Date	Date	1-Jan-18
Construction Period	Months	36
COD Date	Date	1-Jan-21
Operations Period	Years	27
Project End Date	Date	1-Jan-48
Requirement of First Periodic Maintenance	Years	10
First Periodic Maintenance Start	Date	1-Jan-31
First Periodic Maintenance Period	Months	12
First Periodic Maintenance End	Date	1-Jan-32
Requirement of Second Periodic Maintenance	Years	20
Second Periodic Maintenance Start	Date	1-Jan-52
Second Periodic Maintenance Period	Years	12
Second Periodic Maintenance End	Date	1-Jan-53
Initial Depreciation	Date	31-Dec-21
1-5 Years	Start date	1-Jan-18
	End date	31-Dec-22
6-10 years	Start date	1-Jan-23
	End date	31-Dec-27
11-15 years	Start date	1-Jan-28
	End date	31-Dec-32
16-20 years	Start date	1-Jan-33
	End date	31-Dec-37
21-25 years	Start date	1-Jan-38
	End date	31-Dec-42
26-30 years	Start date	1-Jan-43
	End date	31-Dec-47
Months before COD	48	

Frontier Works Organization
BOT Dte

Months per Period

Pre-COD	1
Operations	6

Period Code		-48	-47	-46	-45	-44	-43	-42	-41	-40	-39
Pre-COD Switch			TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Months per Period			1	1	1	1	1	1	1	1	1
Fraction of a Year			8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%
Project Award Date	1-Jul-17										
Financial Close Date	1-Jan-18										
COD Date	1-Jan-21										
Project End Date	1-Jan-48										
Debt Maturity Date	1-Jan-29										
Development Period Switch			TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Financial Close Period Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
Construction Period Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Operations Period Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Debt Repayment Period Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Post-Debt Repayment Period Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Pre-Overlay Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
First Periodic Maintenance Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Second Periodic Maintenance Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Initial Depreciation Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Annual Depreciation Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
IOC Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
COD Date Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
PCOD Date Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Financial Close Date Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Debt Maturity Date Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Project End Date Switch			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Throughput escalation			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Escalation Assumptions											
Operation Period			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Debt Period			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Post-Debt Period			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Project Period			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Handling Charge Escalation			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Throughput Charge Escalation			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Escalation Post Debt			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Debt Period Annual Depreciation			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Upgradation Requirement											
Royalty charges											
1-5 Years			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
6-10 years			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
11-15 years			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
16-20 years			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
21-25 years			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
26-30 years			FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

Frontier Works Organization
BOT Dte

1-Oct-17	1-Nov-17	1-Dec-17	1-Jan-18	1-Feb-18	1-Mar-18	1-Apr-18	1-May-18	1-Jun-18	1-Jul-18	1-Aug-18	1-Sep-18	1-Oct-18	1-Nov-18	1-Dec-18	1-Jan-19	1-Feb-19	1-Mar-19
31-Oct-17	30-Nov-17	31-Dec-17	31-Jan-18	28-Feb-18	31-Mar-18	30-Apr-18	31-May-18	30-Jun-18	31-Jul-18	31-Aug-18	30-Sep-18	31-Oct-18	30-Nov-18	31-Dec-18	31-Jan-19	28-Feb-19	31-Mar-19
2017	2017	2017	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2019	2019	2019

Frontier Works Organization
BOT Dte

-38	-37	-36	-35	-34	-33	-32	-31	-30	-29	-28	-27	-26	-25	-24	-23	-22	-21
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%

TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

[redacted]

1-Apr-19	1-May-19	1-Jun-19	1-Jul-19	1-Aug-19	1-Sep-19	1-Oct-19	1-Nov-19	1-Dec-19	1-Jan-20	1-Feb-20	1-Mar-20	1-Apr-20	1-May-20	1-Jun-20	1-Jul-20	1-Aug-20	1-Sep-20
30-Apr-19	31-May-19	30-Jun-19	31-Jul-19	31-Aug-19	30-Sep-19	31-Oct-19	30-Nov-19	31-Dec-19	31-Jan-20	29-Feb-20	31-Mar-20	30-Apr-20	31-May-20	30-Jun-20	31-Jul-20	31-Aug-20	30-Sep-20
2019	2019	2019	2019	2019	2019	2019	2019	2019	2020	2020	2020	2020	2020	2020	2020	2020	2020

Frontier Works Organization
BOT Dte

-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	[illegible]	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

[redacted]

1-Oct-20	1-Nov-20	1-Dec-20	1-Jan-21	1-Jul-21	1-Jan-22	1-Jul-22	1-Jan-23	1-Jul-23	1-Jan-24	1-Jul-24	1-Jan-25	1-Jul-25	1-Jan-26	1-Jul-26	1-Jan-27	1-Jul-27	1-Jan-28
31-Oct-20	30-Nov-20	31-Dec-20	30-Jun-21	31-Dec-21	30-Jun-22	31-Dec-22	30-Jun-23	31-Dec-23	30-Jun-24	31-Dec-24	30-Jun-25	31-Dec-25	30-Jun-26	31-Dec-26	30-Jun-27	31-Dec-27	30-Jun-28
2020	2020	2020	2021	2021	2022	2022	2023	2023	2024	2024	2025	2025	2026	2026	2027	2027	2028

-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
1	1	1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
8.33%	8.33%	8.33%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE
FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE

FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE

TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

1-Jul-28	1-Jan-29	1-Jul-29	1-Jan-30	1-Jul-30	1-Jan-31	1-Jul-31	1-Jan-32	1-Jul-32	1-Jan-33	1-Jul-33	1-Jan-34	1-Jul-34	1-Jan-35	1-Jul-35	1-Jan-36	1-Jul-36	1-Jan-37
31-Dec-28	30-Jun 29	31-Dec-29	30-Jun-30	31-Dec-30	30-Jun-31	31-Dec-31	30-Jun-32	31-Dec-32	30-Jun-33	31-Dec-33	30-Jun-34	31-Dec-34	30-Jun-35	31-Dec-35	30-Jun-36	31-Dec-36	30-Jun-37
2028	2029	2029	2030	2030	2031	2031	2032	2032	2033	2033	2034	2034	2035	2035	2036	2036	2037

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50 00%	50.00%	50.00%	50.00%	50.00%	50.00%

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

1-Jul-37	1-Jan-38	1-Jul-38	1-Jan-39	1-Jul-39	1-Jan-40	1-Jul-40	1-Jan-41	1-Jul-41	1-Jan-42	1-Jul-42	1-Jan-43	1-Jul-43	1-Jan-44	1-Jul-44	1-Jan-45	1-Jul-45	1-Jan-46
31-Dec-37	30-Jun-38	31-Dec-38	30-Jun-39	31-Dec-39	30-Jun-40	31-Dec-40	30-Jun-41	31-Dec-41	30-Jun-42	31-Dec-42	30-Jun-43	31-Dec-43	30-Jun-44	31-Dec-44	30-Jun-45	31-Dec-45	30-Jun-46
2037	2038	2038	2039	2039	2040	2040	2041	2041	2042	2042	2043	2043	2044	2044	2045	2045	2046

7

34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Frontier Works Organization BOT Plc

74

1-Jul-46	1-Jan-47	1-Jul-47	1-Jan-48	1-Jul-48	1-Jan-49	1-Jul-49	1-Jan-50	1-Jul-50	1-Jan-51	1-Jul-51	1-Jan-52	1-Jul-52	1-Jan-53	1-Jul-53	1-Jan-54	1-Jul-54	1-Jan-55
31-Dec-46	30-Jun-47	31-Dec-47	30-Jun-48	31-Dec-48	30-Jun-49	31-Dec-49	30-Jun-50	31-Dec-50	30-Jun-51	31-Dec-51	30-Jun-52	31-Dec-52	30-Jun-53	31-Dec-53	30-Jun-54	31-Dec-54	30-Jun-55
2046	2047	2047	2048	2048	2049	2049	2050	2050	2051	2051	2052	2052	2053	2053	2054	2054	2055

ntier Works Organizatio
BOT Dte

1-Jul-55	1-Jan-56	1-Jul-56	1-Jan-57	1-Jul-57	1-Jan-58	1-Jul-58	1-Jan-59	1-Jul-59	1-Jan-60	1-Jul-60	1-Jan-61	1-Jul-61	1-Jan-62	1-Jul-62	1-Jan-63
31-Dec-55	30-Jun-56	31-Dec-56	30-Jun-57	31-Dec-57	30-Jun-58	31-Dec-58	30-Jun-59	31-Dec-59	30-Jun-60	31-Dec-60	30-Jun-61	31-Dec-61	30-Jun-62	31-Dec-62	30-Jun-63
2055	2056	2056	2057	2057	2058	2058	2059	2059	2060	2060	2061	2061	2062	2062	2063

Frontier Works Organization
BOT Dte

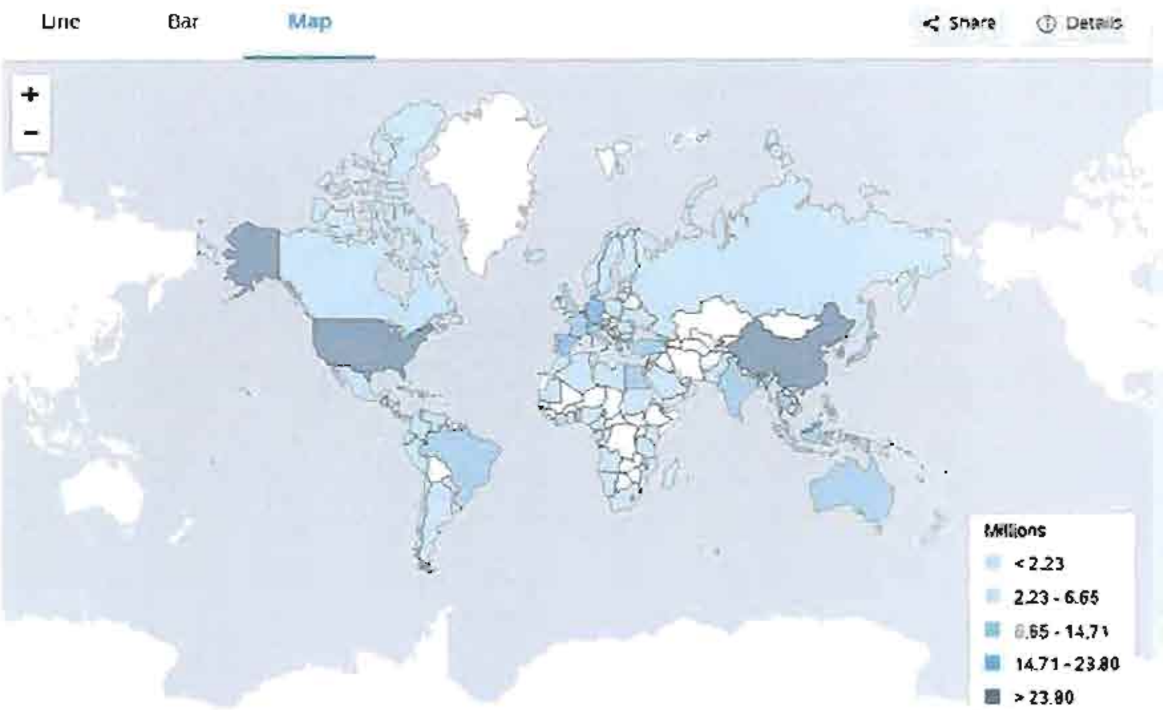
70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50 00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	TRUE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

41 Annexure-G



Frontier Works Organization BOT Dte

42 Annexure-H

	Freight rates effective 01.02.2016											104.00	Rs $	
	No change	1	2	3	4	5	6	7	8	9	10	11	12	13
	0.98180									effective 16 Oct 2010				Rs per KL
			Road							Rail		VOPP	PARCO Pipeline	
	RTD ex-KMR	Depot	KMR	SKP	SSH	MHK	GAT	MCH	CKL	KMR	MHK	KMR	KMR	MHK
1	0	KMR	-	-	-	3,617	-	5,048	5,622					
2	1157	SKP	2,238	-	-	1,683	-	3,449	4,038			738		
3	1440	QTA	3,587	1,930	-	3,310	-	5,570	6,159					
4	1856	SSH	3,590	-	-	251	-	-	-					
5	1839	MHK	3,873	-	-	-	-	1,061	2,449			1,153		
6	2030	VHR	3,809	-	598	801	-	1,665	2,586					
7	2194	KJM	4,116	-	-	654	-	-	-					
8	2236	SWL	4,195	-	-	1,200	540	-	-					
9	2352	GAT	4,414	-	1,468	1,468	-	507	1,548			1,513		360
10	2352	FBD	4,414	-	1,468	1,468	-	507	1,548					
11	2564	MCH	4,812	-	-	1,861	-	-	1,267			1,503		350
12	2804	FAQ	5,640	-	[illegible]	2,538	-	1,557	373					
13	2658	CPL	[illegible]	[illegible]	[illegible]	2,294	-	574	693		1,095			
14	2874	SIH	5,393	-	-	2,449	-	1,191	-		1,460			
15	2874	CKL	5,393	-	-	2,449	-	1,267	-		-			
16	2903	TJB	5,603	-	2,566	2,567	-	1,857	753		1,540			
17	3274	CTL	6,719	-	-	-	-	-	5,765					
18	4005	JGT	-	-	-	-	-	-	5,083					
		[illegible]	4,852	-	-	1,581	-	-	2,010					
		KZD	2,114	-	-	-	-	-	-					
		HBD	4,489	-	-	1,617	-	747	1,784					
		KND	4,394	-	-	1,398	1,023	1,147	1,238					
		SMG	1,994	406	-	1,905	-	2,781	-					
		DLP	1,263	966	-	2,604	-	-	-					
			0	0	0	0	0	0	0					
		BYCO-K	420.7	0	0	0	0	0	0					
		KPLP	0	0	0	0	0	0	0				87.04	
		KKLP	0	0	0	0	0	0	0				102.94	
		Gatti - F	0	0	0	0	220	0	0					

Page 1

Page 2

Frontier Works Organization
BOT Div

43 Annexure-I

PORT QASIM AUTHORITY

Gateway to National Prosperity

No. PQA/PSP/453/2016
Dated: 4th January 2017

M/s Fauji Oil Terminal and Distribution Company Limited
Port Qasim, Bin Qasim
Karachi

Fax # (92-21) 4720010 / 5395656

Subject:- **Expansion of Petroleum Products Handling Facilities at Port Qasim through Private Sector Participation**

1. PQA intends to undertake the expansion of petroleum products handling facilities at Port Qasim by setting up an Integrated Oil Terminal & Storage Farm through Government cum Private Sector participation based upon an unsolicited proposal submitted by Frontier Works Organization (FWO) keeping in view the strategic shortages of petroleum products in Pakistan.

2. The benchmarks of the intended Integrated Oil Terminal & Storage Farm will be as below:

(1) The Project will be on a Build Operate Transfer (BOT) basis with a 30 years concession period.

(2) The Project Developer will have the option of either establishing a new Terminal or the joint use with PQA of PQA's Berth No.1, Marginal Wharf at Port Qasim.

(3) The capacity of developed new Jetty will be 9 million tonnes of petroleum products per annum. Incase of Berth No. 1 MW the capacity will be 4.5 MT petroleum products per annum.

(4) Capacity of the Storage Farm will be:-
(a) Oil products (other than Bitumen) 100,000 tons; and
(b) Bitumen 9,000 tons

BIN QASIM, KARACHI-75020, PAKISTAN. TEL: 92-21-9272111-30, FAX: 92-21-4730108, TELEX: 27811 QASIM PK.
Website: www.portqasim.org.pk E-mail: secretary@portqasim.org.pk

Frontier Works Organization BOT Dte

(5) Project Developer's guaranteed minimum throughput from Date of Successful Commissioning will be as given below:-

0.64 million MT for 1st & 2nd years
2.5 million MT for 3rd to 5th years
3.0 million MT for 6th year onward

(6) The Project Developer in case opts for a new terminal shall undertake:-

(a) capital dredging of the Navigational Channel, Turning Basin and Berthing Basin and the approach from toe-line of the Navigational Channel to the Jetty to commensurate with usage for upto 100,000 metric tons vessel and site specific requirements; and

(b) maintenance dredging of the Berthing Basin and the approach from toe-line of the Navigational Channel to Jetty.

(7) The Project Developer in case exercises the option for Berth No.1, Marginal Wharf shall undertake :-

(a) the improvement/strengthening of structural stability and expansion of Berth No.1 to commensurate with its usage for a 50,000 metric tons vessels and increased depth; and

(b) dredging upto 12.5 meters depth of Berthing Basin and the approach from toe-line of the navigational channel to the Jetty. The capital dredging and maintenance dredging of the Berthing Basin and the approach from toe-line of the Navigational Channel to Jetty, will be the liability of the Project Developer.

(c) dredging upto 13.0 meters depth of Turning Basin i.e. from QICT-I to LCT. The capital dredging of the Turning Basin will be the liability of the Project Developer whereas

Frontier Works Organization BOT Dte

maintenance dredging of the same will be the responsibility of PQA.

(8) Minimum Guaranteed Royalty USD 1.13 per ton for HSD/Motor Gasoline/ bitumen/all other oil products.

(9) Royalty from Date of Successful Commissioning:-

Year	Rate of Royalty per ton
1-5 years	USD 1.13
6-10 years	USD 1.25
11-15 years	USD 1.40
16-20 years	USD 1.55
21-25 years	USD 1.70
26-30 years	USD 1.85

(11) In case the **Project Developer** opts for Berth No.1 Marginal Wharf **for** the Project then besides the **Implementation** Agreement, PQA & **Project Developer** will enter into a License Agreement for Berth No.1 **and a** License Fee will be payable **to** PQA amounting to at **the** present **rate** of Rs.839 per square meter per **annum with increase of** 10% **annually / compounded under the** PQA Land Allotment **Policy**. Next **increase** will be from 01.07.2017. A security deposit **will** be made equivalent to twelve months license fees.

(12) Construction period for completion of the Project (Terminal & Storage Farm):-

(a) **In case of Berth No.1 Marginal Wharf** 02 (two) years

(b) **In case of new Terminal** 03 (three) years

Note : Liquidated Damages for **delay in completion of Project at** the rate of **Rs.100,000/-** per day.

(13) Performance **Bond for the construction period USD** one million to be submitted before signing of the Implementation Agreement.

Frontier Works Organization BOT Dte

PORT QASIM AUTHORITY

Gateway to National Prosperity

(14) PQA shall hire a PQA Consultant for the Project for which a tripartite agreement shall be entered into between PQA, Project Developer and the PQA Consultant. The fees of the Project Consultant shall be borne by the Project Developer.

(15) "PQA Charges" will include port dues, pilotage, extra pilotage, light dues, wharfage, royalty, berthing and mooring fees, tug charges, fire fighting service charges, lease/license charges and other PQA scale of rates, dues and charges pursuant to PQA Act & PQA Land Allotment Policy as promulgated from time to time, charges for utilities and other common services.

3. FOTCO is requested to give consideration within 30 days of receipt of this letter to the above mentioned proposed Project /Terms for purposes of negotiations under Article 3.13.3 of the Implementation Agreement dated 8th December, 1992 between PQA & FOTCO failing which PQA will tender the Project for third parties.

(Muhammad Saqib)
Secretary

Frontier Works Organization
BOT Dte

BIN QASIM, KARACHI-75020, PAKISTAN, TEL: 92-21-9272111-30, FAX: 92-21-4730108, TELEX: 27611 QASIM F
Website: www.portqasim.org.pk, E-mail: secretary@portqasim.org.pk

44 Annexure-L

FROM : FAX NO. : 07 Apr. 2016 09:43AM P2

Ministry of Petroleum & Natural Resources
Directorate General of Oil
****

MINUTES OF THE 1ST MEETING OF TASK FORCE

FWO PROJECT FOR OIL INFRASTRUCTURE DEVELOPMENT

The 1st meeting of the Task Force constituted by the Secretary, Petroleum & Natural Resources on the Oil Infrastructure Development Project by Frontier Works Organization was held on 4th April, 2016 under the chairmanship of Director General Oil. List of participants is attached.

2. At the outset, D.G (Oil) read the salient features of the TORs prepared for the Task Force. He also mentioned that based on the TORs, FWO prepared a pre-feasibility report which was provided to the members of the Task Force. He therefore, invited the representatives for their comments for further deliberation.

3. PAPCO representative explained that they have completed a detailed study on Mogas movement through white oil pipeline and the same is pending for approval of their Board. Further works may start after Board approval. However, the issue will have to be tackled either by connectivity between Keamari and Port Qasim or through a separate jetty at Port Qasim. FWO informed that they have thoroughly examined the issue and found the connectivity to be next to impossible due to problems of ROW. Therefore, they would prefer construction of specific jetty for the purpose as per their project conception.

4. CEO, OCAC differed with the proposal for a new jetty on the basis of assumptions taken by FWO. He explained that FWO has taken over-all demand figures which should be assumed as not net of production by local refineries and imports being handled at Port Qasim and Keamari ports. In that case, HSD volumes become negative by year 2018 while there will be a deficit of only about 2 million tons as against FWO projections of 5.2 million tons. Therefore, it will be a better option to look for certain arrangements at the existing FOTCO jetty through joint participation of FOTCO, FWO and PAPCO/PARCO. D.G (Oil) also emphasized to explore possibilities in that direction. OGRA representative also pointed out some anomalies with regard to IFEM calculations made in the report. He pointed out that refinery up-gradation projects are also underway and that would further slash the port handling volumes as well as reducing the movement in the north region due to ARL up-gradation. He suggested necessary corrections in order to work out the project details on a sound footing.

Frontier Works Organization BOT

5. PARCO representative was of the opinion that there was some justification for new jetty which would provide an alternate handling facility in case of any disability at the existing jetty. PAPCO also agreed with the idea. However, PARCO informed that existing MFM pipeline is capable to handle the volumes of Mogas and would be sufficient for at least next 5 years. Thereafter, if need be, they are able to construct MFM-II. Therefore, FWO may consider extension beyond Machike upto Thalian and Taru Jabba.

6. D.G, FWO appreciated the comments of CEO, OCAC/OGRA and assured that the projections in the project report would be reviewed and revised in light of their suggestions. He further emphasized that this project need to be considered in its entirety and with joint / participatory approach otherwise if all stakeholders are left to partake in their respective spheres then this project is not likely to kick off.

7. After detailed discussions, following decision were taken in the matter:

a. *FWO would review and revise the projections of the project plan in light of discussions held in the meeting in a week's time.*

b. *Thereafter, representatives from FWO, PAPCO and PARCO would meet in OCAC at Karachi to further deliberate in order to achieve clarity with regard to construction of new jetty and issues related to initial pipeline fill and pipeline tariff. CEO, OCAC was advised to make sure that representatives from PSO also attend this meeting and if necessary, FOTCO can also be invited.*

c. *2nd meeting of the Task Force will be convened in Islamabad subsequently.*

8. The meeting ended with the vote of thanks by the Chair.

List Of Participants

FWO PROJECTS – MEETING OF THE TASK FORCE

S. No:	Name	Designation	Organization/Department
01	Mr. Abdul Jabbar Memon	DG(Oil)	Ministry of Petroleum
02	Mr. Iltaf Hussain Ansari	Deputy Director (M)	Ministry of Petroleum
03	Mr. Naeem Nawaz	RO (M)	Ministry of Petroleum
04	Mr. Imran Ali Abro	RO (M-II)	Ministry of Petroleum
05	Mr. Atif Sajjad	JED (Fin)	OGRA
06	Mr. S. Zawar Haider	General Manager	PARCO
07	Mr. Feroze Cawasji	CEO	PAPCO
08	Dr. Ilyas Fazil	CEO	OCAC
09	Maj. Gen Afzal	DG	FWO
10	Mr. Salman Qaisrani	Director (BOT)	FWO
11	Mr. M. Bhatti	Fin Manager	FWO
12	Mr. Ejaz Qureshi	Consultant Engr	FWO
13	Mr. Shoaib Siddiqui	CEO	Consultant PEC

Frontier Works Organization BOT

45 Annexure-M

Ministry of Petroleum & Natural Resources
Directorate General of Oil
****

MINUTES OF THE 2ND MEETING OF TASK FORCE

FWO PROJECT FOR OIL INFRASTRUCTURE DEVELOPMENT

The 2nd meeting of the Task Force constituted by the Secretary, Petroleum & Natural Resources on the Oil Infrastructure Development Project by Frontier Works Organization was held on 8th August, 2016 under the chairmanship of Secretary (P&NR) himself. MD, PSO attended the meeting through video link. List of participants is attached.

2. Representatives of FWO made a presentation on the project details and feasibility. After detailed discussions/deliberations, the meeting was concluded as summarized below:

a. *FWO may construct a new oil jetty at Port Qasim for handling **imported motor** gasoline under an agreement with FOTCO/PQA. Its tariff shall be **approved** by the Ministry of Ports & Shipping and the relevant authorities under their administration. Ministry of Petroleum & Natural Resources (MPNR) and the Oil Industry support the proposal. However, the tariff rating shall be commercially viable and acceptable to Oil Marketing Companies. FWO shall also collaborate with PSO in the matter.*

b. *FWO may also connect the new oil jetty with White Oil Pipeline (WOP) network by constructing a pipeline for transporting the imported motor gasoline. Parco has no objection to the pipeline connectivity, while FWO may collaborate with Parco/Papco in this regard. MPNR and the oil industry are in support of the proposal.*

c. *MPNR and the oil industry are also in support of the proposal for development of 100,000 MT storage / infrastructure at Port Qasim by FWO, However, Oil Marketing Companies may be consulted in this respect.*

d. *FWO may construct a parallel pipeline from Mehmoodkot/Faislabad via Thallian to Taru-Jabba on its own Right of Way. Parco/Papco has no objection to the parallel pipeline. MPNR is of the view that pipeline should be constructed on purely commercial basis without any commitment of minimum throughput guarantee by the Government. However, FWO may submit specific proposals for tariff determination and minimum throughput guarantee for which, after review and acceptance by the OMCs, MPNR may refer the case of throughput guarantee to the Ministry of Finance for decision. MPNR would also approach OGRA for pipeline tariff determination.*

e. *FWO shall obtain all specific licenses for constructing storages and pipelines from OGRA, being the Authority.*

f. *FWO would consult OGRA with regard to revision/reconciliation of financial model and IFEM related calculations.*

g. *Some workings in the feasibility report, as pointed out by MD, Parco and others in the meeting e.g MS/HSD demand growth with CPEC economic impact etc. need to be revisited.*

3. The meeting ended with the vote of thanks by the Chair.

Frontier Works Organization
BOT Dte

List Of Participants

FWO PROJECTS – 2nd MEETING OF THE TASK FORCE

S. No:	Name	Designation	Organization/Department
01	Mr. Arshad Mirza	Secretary	Ministry of Petroleum
02	Mr. Abdul Jabbar Memon	DG(Oil)	Ministry of Petroleum
03	Mr. Iltaf Hussain Ansari	Deputy Director (M)	Ministry of Petroleum
04	Mr. Imran Ali Abro	RO (M-II)	Ministry of Petroleum
05	Mr. Atif Sajjad	JED (Fin)	OGRA
06	Mr. Tariq Rizavi	MD	PARCO
07	Sheikh Imran Ul Haque	MD & CEO	PSO (Video Link)
08	Dr. Ilyas Fazil	CEO	OCAC
09	Mr. Salman Qaisrani	Director (BOT)	FWO
10	Mr. Shoaib Siddiqui	CEO	PEC – Consultant(FWO)
11	Mr. Saqib Khawaja	CEO	IDEA - Consultant(FWO)
12	Maj. A. Majid	DGM (BOT)	FWO

Frontier Works Organization BOT Dte

KPMG

Review Report

FWO Feasibility Study
For setting up an Oil Jetty at Port Qasim and enhancement of White Oil Pipeline Infrastructure in Pakistan

Deal Advisory

May 2017

Contents

The contacts at KPMG in connection with this report are:

Kashif Malik
Partner - Advisory

KPMG Taseer Hadi & Co., Chartered Accountants

Tel: + 92 51 282 3558
kmalik@kpmg.com

Sajid Raza
Director – Advisory

KPMG Taseer Hadi & Co., Chartered Accountants

Tel: + 92 51 282 3558
sajidraza@kpmg.com

Glossary of terms (1)

APL	Attock Petroleum Limited
BMI	Business Monitor International
C & F	Cost & Freight
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CFADS	Cash Flow Available for Debt Servicing
COD	Commercial Operation Date
CPEC	China Pakistan Economic Corridor
DGPC	Directorate General of Petroleum Concessions
DHDS	Diesel Hydrodesulphurization
DSCR	Debt Service Coverage Ratio
EAT	Earning After Tax
EBITDA	Earning Before Interest Tax & Dep. Allowance
EBT	Earning Before Tax
EPC	Engineering Procurement & Construction
FO	Furnace Oil
FOTCO	Fauji Oil Terminal Company
FWO	Frontier Works Organization
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GP	Gross Profit
HOBC	High Octane Blending Component
HSD	High Speed Diesel
IFEM	Inland Freight Equalization Margin
IRR	Internal Rate of Return
JP	Jet Propellant
KM	Kilometer
KPK	Khyber-Pakhtunkhwa
KPMGTH or KPMG	KPMG Taseer Hadi & Co.

KPT	Karachi Port Trust
MFM	Mahmoodkot- Faisalabad–Machhike
MHD - GAT	Mehmood Kot-Gatti -pipeline
MHD - MCK	Mehmood Kot-Machike-pipeline
MHD - THL	Mehmood Kot-Thallian-pipeline
MHD - TJB	Mehmood Kot-Tarrujabba-pipeline
MOGAS	Motor Gas
MOP&NR	Ministry of Petroleum & Natural Resources
MS	Motor Spirit
MT	Metric Ton
NPV	Net Present Value
NRL	National Refinery Limited
OCAC	Oil Companies Advisory Council
OGRA	Oil & Gas Regulator Authority
OMC	Oil Marketing Company
OPEX	Operating Expenditure
PAPCO	Pak-Arab Pipeline Company
PARCO	Pak-Arab Refinery Company
PCA	Petroleum Concession Agreement
PKR	Pakistan Rupee
PQA	Port Qasim Authority
PRL	Pakistan Refinery Limited
PSO	Pakistan State Oil
ROW	Right of Way
SCADA	Supervisory Control and Data Acquisition
SPV	Special Purpose Vehicle
TPA	Tons Per Annum
TPML	Total Parco Marketing Limited
USD	United States Dollar
WOP	White Oil Pipeline
Y-o-Y	Year on Year

KPMG

Frontier Works Organization BOT Dte

KPMG

Executive summary

Executive summary (1)

The contemplated project development and the feasibility study

- Frontier Works Organization (FWO) is contemplating setting up an Oil Jetty at Port Qasim and enhancement of White Oil Pipeline Infrastructure in Pakistan. In this regard, FWO has prepared a feasibility study for the project. The project scope includes development of jetty and the white oil pipeline infrastructure, while the development of storage facilities by FWO and other supply infrastructure has not been considered as part of the project and for the purposes of feasibility study.
- The MOGAS demand is anticipated to increase significantly going forwards while the present handling capacity at Kemari Port is insufficient to handle large quantum. In order to meet the growing demand of MOGAS, FWO plans to utilize the existing infrastructure for a MOGAS specific Oil Jetty at Port Qasim.
- The jetty is planned to be connected to the WOP network which can be made available to interim storages of various OMC's along WOP network for consumer needs such as Shikarpur, Mahmoodkot, Faisalabad & Machikae and shall also cater for the needs of Karachi and surroundings for Local OMC's. The WOP at Mahmoodkot will be extended up till Thallian (The source point declared by MOP&NR) adopting the ROW along Motorway. Initially the storage facility of 50,000 MT will be developed for providing consumer supplies to Various OMC's and other major Consumers. The pipeline network at Thallian will further be extended to Tarrujabba which at present is connected through road network. The proposed extension has high potential of connecting the Northern Province of the Country (Khyber Pakhtunkhwa) with the Petroleum Pipeline network. And further extension to Jalalabad Afghanistan.
- As to the project progress, presentation were made in the Ministry of Petroleum & Natural Recourses (MoP & NR) on the project scope by FWO and other stakeholder in February 2016, and subsequently the Task Force formed by Federal Secretary for Petroleum & Natural resources with representation from MoP & NR, OCAC, PARCO, PSO, OGRA and FWO. FWO have had consultation with others stakeholders, while we were given to understand that all the stakeholders are on board for the project development.
- The total project cost is estimated at USD 708.7 million, while with the current set of assumptions, the project return have been summarized as follows:

Project IRR	16.81%
Equity IRR	34.55%
Equity NPV	461
Payback Period (Years)	3.99
Pipeline Capacity Reached (Years After COD)	0.50
Jetty Capacity Reached (Years After COD)	1.50

EBITDA

Cash flow available for dividends

KPMG

Executive summary (2)

Analysis of key assumptions and scenario analysis

- The assumptions applied by FWO management for the purposes of project feasibility have been analyzed in details. Because of the unique nature of project, the market benchmarks are not available under Pakistan market context with reference to almost all of the key assumptions. Accordingly, the impact on project viability has also been analyzed by undertaking variation in key assumptions.
- There are certain assumption for which the current financial model is not capable to demonstrate the scenario results, which have separately indicated. The scenarios analyzed by changing the key assumptions are independent i.e. the impact of preceding scenario is not carried to the next scenario.
- Project capital cost estimates
- The development of jetty and setting up white oil pipeline infrastructure is a specialized engineering/ construction segment. FWO management informed us that the technical side of the project has been consulted with in house and external professionals of the industry who have been related the industry for the past 35 years and have confirmed the technical and costs aspects of the project but the documentation is confidential hence cannot be shared. FWO management also clarified that they have solicited independent confirmation to the project cost estimates, which are confidential documents.
- The project cost estimates, regardless of being thoroughly worked and conferment independently, remain exposed to certain uncontrollable risk like the local currency devaluation and other factors not planned at project conception. Accordingly, the feasibility results have been analyzed by increasing the project EPC costs by 20% in order to assess the sensitivity of variation in project costs on project viability.
- The results of this scenario analysis indicate that the project returns are less sensitive to increase in project capital cost as the variation in project capital costs yield relatively marginal impacts on project returns.
- Pipeline usage tariff
- The tariff or usage charge for the FWO white oil pipeline component would be determined by OGRA. The quantum of tariff remains the pertinent variable from project viability perspective, which remain uncertain at this point in time. FWO management is of the view that the likely range of tariff would be the same as taken in the financial model, while FWO management informed that correspondence with OGRA is confidential hence cannot be shared until the tariff has been officially approved by the concerned department.
- Accordingly, the feasibility results have been analyzed by decreasing the tariff by 20% in order to assess the sensitivity of variation in tariff on project viability.
- The results of this scenario analysis indicate that the project returns are sensitive to decrease in tariff, where at half the level of tariff assumed by FWO, the project starts tilting towards an unviable proposition. With 20% reduction in tariff, the indicators of project returns in acceptable range.

Executive summary (3)

Analysis of key assumptions and scenario analysis – contd.	• Jetty oil handling charge • For the purpose of this feasibility study, FWO management has estimated an oil handling charge of USD 6 per MT. • We have analyzed feasibility results by decreasing the oil handling charge by 20% in order to assess the sensitivity of variation in oil handling charge on project viability. • The results of this scenario analysis indicate that the project returns are marginally sensitive to decrease in oil handling charge, where even at 20% of the assumed charge level, the project returns indicative acceptable level. • Throughput at Oil Jetty • For the purpose of this feasibility study, FWO management has estimated throughput based on demand estimates, while the 100% capacity utilization is achieved in the second year. • We have analyzed feasibility results by decreasing the demand throughput by 50% in order to assess the sensitivity of variation in throughput on project viability. • The results of this scenario analysis indicate that the project returns are marginally sensitive to decrease in demand throughput at oil jetty, where even at 50% of the assumed throughput, the indicated project returns are marginally affected. • Pipeline throughput • For the purpose of this feasibility study, FWO management has estimated pipeline throughput based on demand estimates, while the 100% capacity utilization is achieved in the forth year (1st year with jetty operations). • We have analyzed feasibility results by decreasing the demand throughput by 50% in order to assess the sensitivity of variation in throughput on project viability. • The results of this scenario analysis indicate that the project returns are less sensitive to decrease in demand throughput at pipeline, where even at 50% of the assumed throughput level, the calculated project returns are indicating a viability scenario. • Operating costs assumptions • For the purpose of this feasibility study, FWO management has estimated operating costs based on various technical teams inputs. • We have analyzed feasibility results by increase the operating costs by 40% in order to assess the sensitivity of variation in operating costs on project viability. • The results of this scenario analysis indicate that the project returns are less sensitive to increase in operating costs, where even at 40% increase in operating costs, the project returns are indicating a viability scenario.

Executive summary (4)

Analysis of key assumptions and scenario analysis

- Project components – oil jetty and white oil pipeline
- Based on the feasibility study, there are two project components, one being the development of jetty and second being the white oil pipeline infrastructure.
- These two project components can be regarded as distinct in terms of operating model and structure and project viability assessment can be performed separately, however FWO management has represented that the project is only viable if it's taken as an integrated project and not in segments in terms of investment and as per the need of the country which has been agreed by the Ministry of Petroleum, hence the project has not been analyzed as two separate components.
- Project structure - right of ways
- As per the feasibility study, FWO would require right of way for laying of white oil pipeline infrastructure, which is currently planned along with the motorways. FWO was requested to share the right of way study and cost estimate for securing right of way.
- In response to the request, the management of FWO clarified that the details of the right of way study are confidential and cannot be shared, but as mentioned in the feasibility study it will be along the motorways which are already with FWO.
- Project structure – storage facilities
- We understand that additional white oil storage facilities would be required to be developed by other stakeholder as ancillary to this FWO project. The project implementation and successful operations would be dependent on the availability of such facilities.
- We were given to understand that FWO is in discussions with other stakeholders (primarily OMCs) for development of storage facilities and we requested FWO management to share the correspondence and status of discussions with other stakeholders as to the development of required storage facilities.
- The management of FWO represented that the correspondence with other stakeholders is confidential hence cannot be shared without prior approval of the stakeholders.
- The current situation of storage capacity in Pakistan has been explained in the feasibility and the importance of enhanced storage capacity in the country has been evident from the petroleum shortage in the country in past years and the failure of several OMC's to meet the fuel requirement of OGRA to maintain 21 days fuel stock.
- Development of oil jetty
- As per the feasibility study, FOTCO has the first right of refusal for development of any Oil related infrastructure at Port Qasim under article 3.13.3 of the Implementation Agreement dated 8th December, 1992 between FOTCO and PQA.
- FWO management has clarified that the response of FOTCO is confidential hence cannot be shared.

Executive summary (5)

Analysis of key assumptions and scenario analysis

- Enhancements at other WOP networks
- As per the feasibility study, the project envisages eliminate the road transport of MOGAS from Karachi to Up-Country. We understand that currently the whole of MOGAS transportation is undertaken through tankers and the existing white oil pipeline infrastructure is used for other refined fuels primarily diesel. For enabling transportation to MOGAS on white oil pipeline, the existing white oil pipeline network would need up gradation.
- We further understand that FWO has initiated negotiations with Pak-Arab Pipeline Company PAPCO for optimum utilization of white oil infrastructure. The viability of FWO white oil pipeline project remain dependent on up gradation of PAPCO existing white oil pipeline infrastructure.
- FWO management has clarified that PAPCO had given tender advertisement for up-gradation of its pipeline last year, the work has already been awarded to a company and as the mutual understanding the PAPCO pipeline will be ready for utilization by the time FWO achieves COD for its project.
- Foreign exchange risk
- The pipeline usage tariff and oil handling tariff at jetty has been assumed as USD pegged while high escalation assumptions have been applied. We requested for a clarification on the FWO project model with reference to PKR devaluation risks, which have not separately been identified. The financial model is not capable of performing sensitivities on PKR devaluation.
- Alliance with a leading OMC
- The feasibility study states that after several meetings & negotiations with one of the leading Oil Marketing Company, a consensus was reached, according to which the OMC will charge 0.95 USD/MT for Storage facilities at Port Qasim.
- FWO management has clarified that the documentation supporting the consensus on storage charge with one of the leading OMC are confidential documents and cannot be shared.
- Arrangement with Santex Energo Export
- The feasibility states that Santex Energo Export a European based company having a consortium of world renowned companies in the field of petroleum, refinery, pipelines and other petroleum projects with or without financing, have shown intent to provide complete package of financing the subject project, while the financial model has been made on the basis of financial offer received by FWO and the financial terms provided by Santex Group.
- FWO management has clarified that FWO has solicited an independent confirmation to the project cost estimates, which are confidential documents and cannot be shared at this stage.
- Working capital assumptions
- As per the feasibility study, working capital assumptions have not been separately considered. FWO management has clarified that the OPEX cost mentioned in the financial model are inclusive of the working capital assumption

Executive summary (6)

Scenario analysis results

Increase in project EPC cost by 20%	Base case	Scenario
Project IRR	16.81%	14.09%
Equity IRR	34.55%	30.05%
Equity NPV	461	380
Payback Period (Years)	3.99	4.49
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

Pipeline usage tariff reduced by 20%	Base case	Scenario
Project IRR	16.81%	13.79%
Equity IRR	34.55%	28.60%
Equity NPV	461	289
Payback Period (Years)	3.99	4.49
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

Jetty oil handling charge reduced by 20%	Base case	Scenario
Project IRR	16.81%	16.22%
Equity IRR	34.55%	33.31%
Equity NPV	461	419
Payback Period (Years)	3.99	3.99
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

Throughput at Oil Jetty reduced by 50%	Base case	Scenario
Project IRR	16.81%	16.40%
Equity IRR	34.55%	33.42%
Equity NPV	461	442
Payback Period (Years)	3.99	3.99
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	5.50

Pipeline throughput reduced by 50%	Base case	Scenario
Project IRR	16.81%	15.20%
Equity IRR	34.55%	30.44%
Equity NPV	461	392
Payback Period (Years)	3.99	4.49
Pipeline Capacity Reached (Years After COD)	0.50	5.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

Operating costs increased by 40%	Base case	Scenario
Project IRR	16.81%	15.65%
Equity IRR	34.55%	32.96%
Equity NPV	461	366
Payback Period (Years)	3.99	3.99
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

KPMG

Introduction & background

Introduction and background (1)

Introduction

- We understand that Frontier Works Organization (hereinafter referred to as "the Client" or "FWO") is contemplating setting up an Oil Jetty at Port Qasim and enhancement of White Oil Pipeline Infrastructure in Pakistan. In this regard FWO has prepared a feasibility study for the project.
- FWO has engaged KPMG Taseer Hadi & Co. Chartered Accountants (hereinafter referred to as "KPMG LP" or the "Firm") to carry out a review of the feasibility study.
- We understand that the objective of this exercise is to assist FWO management with their analysis of potential options relating to the contemplated project development. In order to achieve this objective, we have undertaken analysis and made inquiries directed towards those business activities, related financial data and publicly available market information that were identified as important under the context of the objective of this engagement.

Scope of work

- The agreed scope of work for review of pre-feasibility study comprise of:
  - Analysing whether project feasibility study has been appropriately constructed, and that the logical integrity, internal consistency and arithmetical accuracy of the formulae, algorithms and calculations within the project financial feasibility are adequate
  - Analysing whether project feasibility is properly prepared on the basis of the assumptions i.e. all underlying assumptions have been properly reflected in the financial model and the model are capable of forecasting project cash flows in order to accurately calculate the equity returns.
  - Assessing whether the best estimate assumptions on which the feasibility is based are reasonable and, in the case of hypothetical assumptions, such assumptions are consistent with the purpose of the information.
  - Performing risk exposure analysis while building scenarios based on the risk assessment.

The pre-feasibility study for the contemplated project development

We understand that the feasibility study for the contemplated project development has been prepared by FWO management. The pre-feasibility study comprise of two components, a feasibility study document and the financial forecast.

- The feasibility study document include:
  - Project overview and background context information pertaining to the development of Oil Jetty at Port Qasim and enhancement of White Oil Pipeline Infrastructure in Pakistan.
  - Overview of the oil and gas sector in Pakistan specifically under project context detailing the history, market structure, regulatory environment, growth potential and information specific to FWO planned project.
  - Project overview section outlining the project design assumption, basic requirements for the project development and project facilities.
  - Financial feasibility section outlining the summary results of financial projections and key assumptions
- The feasibility financial forecast include.
  - Control worksheets summarizing the project and equity returns with option for performing sensitivity analysis on key assumptions.
  - Assumption and project timing work sheet defining the key applied assumptions.
  - Projected financial statements including projected balance sheet, projected income statement and projected cash flow statement.
  - Supporting worksheets for project costs, fund flow, revenue, OPEX, debt and fixed assets.

Frontier Works Organization BOT Dte

Introduction and background (2)

The review exercise and this report

- This report has been prepared by KPMGTH solely for the purpose of providing selected information on a confidential basis to FWO in accordance with our engagement letter dated 13 April 2017.
- This report is limited to the scope set out in our engagement letter dated 13 April 2017. Accordingly, there may be other issues of interest to the Client which may not be included in this report.

  This report is confidential and for the internal use of the Client only. It is not to be distributed or to be referred or quoted, in whole or in part, without our prior written consent except as specifically defined in our engagement letter dated 13 April 2017.
- The firm does not accept or assume responsibility to anyone other than the addressees of this report, for its work, for this report or for any judgments, findings, conclusions, recommendations or opinions that the firm has formed or made. The work was undertaken and this report was issued, on agreed terms of engagement, in order that the firm might state to the addressees those matters on which it agreed to report and for no other purpose.
- This report will serve as a tool for analysis of the contemplated project development and does not purport to contain all the information that the decision makers may require. While all efforts have been made to incorporate all information relevant to the intended use of this report, KPMGTH does not make any representations or warranties, express or implied as to the completeness of the information contained in this report. No decision should be based solely on the basis of the information provided through this report. Any decision by the Client regarding whether or not to use the results of this report shall rest solely with the Client.
- KPMGTH has not verified any of the information presented in this report, and has relied upon the information and representations provided by the management of FWO and other publicly available information.

  KPMGTH's work and this report were not planned or prepared in contemplation, or for the purpose, of anyone other than the addressees' interests or needs. Therefore, items of possible interest to others may not have been specifically addressed for the purposes of this report. The use of professional judgment, and the assessment of issues or their relevance (as appropriate) for the purpose of the KPMGTH's work and this report, mean that matters may have existed that would have been assessed differently by others for their purposes. KPMGTH does not warrant or represent that the information in this report is appropriate for their purposes. This report was not created for, and should not be treated as suitable for, any purpose other than that set out in the report itself and/or in the terms of our engagement with the Client.
- This report include certain statements, estimates and projections with respect to anticipated future operations of the contemplated project development. Such statements, estimates and projections reflect certain assumptions concerning anticipated results, which assumptions and/or anticipated results may or may not prove to be correct. Whilst the statements, estimates, and projections represent the views of FWO management based on what they consider to be reasonable assumptions at the time they are prepared, the same should not be considered as an accurate representation of future results. In particular, no representation or warranty is given as to the achievement or reasonableness of any future projections, management estimates, prospects or returns
- KPMGTH thereby expressly disclaim all liability arising out of any errors or omissions from, or mistakes in assumptions with respect to the information provided in this report.
- This report makes reference to 'KPMGTH Analysis'; this indicates only that we have (where specified) undertaken certain analytical activities on the underlying data to arrive at the information presented; we do not accept responsibility for the underlying data.

7

KPMG

Overview of the feasibility study

Overview of the feasibility study (1)

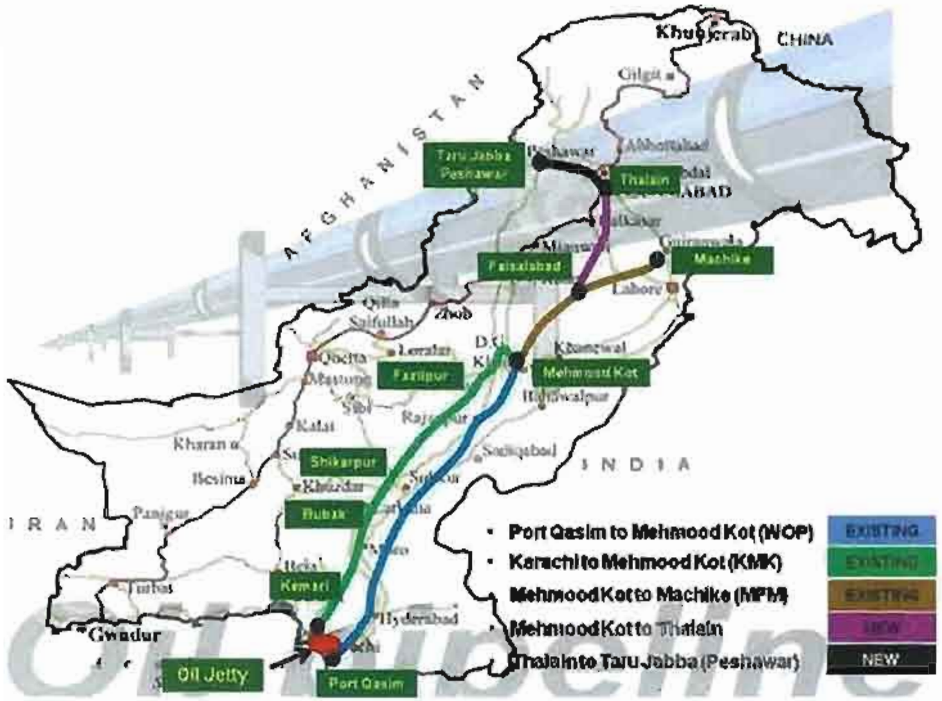
The contemplated project development

- Project context
- The refined petroleum products consumption observed significant growth in recent years. To cater for the present and future need of petroleum products the requirement for handling jetties, pipeline infrastructure, storage depots & terminals are required for short term and long term requirements.
- Currently, there are oil handling Jetties at Kemari & Bin-Qasim Ports. Kemari Port has three oil Jetties with individual capacity of 8 Million Ton per year. The major products being handled at Kemari Port are crude & MOGAS & a small quantity of Diesel. MOGAS is transported through road transport for up-country oil depots.
- The FOTCO jetty at Port Bin-Qasim has a capacity of 9 Million Ton per year. The major products being handled at FOTCO jetty are Furnace Oil, Diesel & Crude. The State-run and private companies can store roughly 1.3 million tons of petroleum products in tanks scattered around the country.
- Pakistan being a longitudinal market for petroleum products – where the points of supply like ports are located in the south and bulk consumption taking place up north -- makes it all the more important to address the issue of storage facilities. Government of Pakistan encourages private entities to invest in petroleum product storage development, in order to fill in the gap of supply & demand.
- In the present state, majority of the Oil Marketing Companies do not have requisite storage facilities. OMC's are either dependent on major state owned OMC or they try to import the 35,000 MT cargo by pooling in the resources with other small OMC's. In both the cases the delay impacts the end consumer and causes shortages of petroleum products in one of the fastest growing consumer market.

FWO planned project development

- FWO has taken initiative to make available the Petroleum Products within the Country by joining hands with one of the largest Oil Suppliers of the world.
- FWO is also focusing on upgrading Oil Jetty, Storage Facilities and pipeline network to meet the strategic needs of the country along with the commercial angle of supplying petroleum products to oil marketing companies and other consumer supplies at door step throughout the country in order to meet the urgent petroleum product requirement immediately and in the long run completely. Major players in the field and investors have contacted FWO for the formation of a joint venture.
- FWO plans to form a SPV with potential players in the field, the equity investment & shareholding will be decided during the course of negotiation/ agreement. The SPV shall acquire the services of EPC contractor with the provision of supplier financing to achieve the project objective with 100% supplier credit basis.
- The SPV shall carry out detailed feasibility study to establish the financial credential of the project various other potential investment opportunities will also be gauged in the light of feasibility study. The option of bank borrowing at different debt equity ratio will also be studied, the tenure of supplies financing or bank borrowing will be for a period ranging from 8-10 years.
- The feasibility study envisages two project components, one being the development of jetty and second being the white oil pipeline infrastructure, while the development of storage facilities by FWO and other supply infrastructure has not been considered as part of the project and for the purposes of feasibility study.

Overview of the feasibility study (2)



Development of Oil Jetty at Port Qasim

The MOGAS demand is anticipated to increase significantly going forwards while the present handling capacity at Kemari Port is insufficient to handle large quantum. In order to meet the growing demand of MOGAS, FWO plans to utilize the existing infrastructure for a MOGAS specific Oil Jetty at Port Qasim for which 50 Acers of land will be required. FWO also plans to build a storage capacity in the future, while the parcel of different OMC's will be stored at the already existing storage facilities of OMC's at Port Qasim.

Pipeline details and elevations

The current optimum capacity of PARCO WOP is 8 Million Tons / year (currently being utilized at approximately 5 Million Ton/ year), the optimum capacity can be enhanced to 12 Million Ton/ year by installing additional booster station. FWO has initiated negotiations with Pak-Arab Pipeline Company PAPCO for optimum utilization of WOP infrastructure. The possibility can be common storage of MOGAS for onward transmission to WOP. PAPCO has a plan for Dual utilization of WOP through pigging.

The Product stored connected to jetty will be connected to the WOP network which can be made available to interim storages of various OMC's along WOP network for consumer needs such as Shikarpur, Mahmoodkot, Faisalabad & Machikae and shall also cater for the needs of Karachi and surroundings for Local OMC's. The WOP at Mahmoodkot will be extended up till Thallian (The source point declared by MOP&NR) adopting the ROW along Motorway. Initially the storage facility of 50,000 MT will be developed for providing consumer supplies to Various OMC's and other major Consumers. Moreover connecting the facility with adjacent Oil Village as per phase-I.

The pipeline network at Thallian will further be extended to Tarrujabba which at present is connected through road network. The proposed extension has high potential of connecting the Northern Province of the Country (Khyber Pakhtunkhwa) with the Petroleum Pipeline network. And further extension to Jalalabad Afghanistan.

Following pipelines are suggested for proposed hydraulic analysis

- Jetty through trestle to pumping stations – 30" dia
- Proposed White Oil pipeline network – 18" dia

Overview of the feasibility study (3)

- Project storage and transfer arrangements
- The following pipeline transfer arrangements have been envisaged as part of the system:
  - MOGAS import (Jetty-Pumping station-Buffer terminal-White oil storage facility-White oil pipeline network from Port Qasim to Mahmood Kot via Shikarpur-White oil pipeline extension form Mahmood Kot to Faisalabad-Thallian- Tarrujabba)
  - HSD import (Jetty-Pumping station-Buffer terminal-White oil storage facility-White oil pipeline network from Port Qasim to Mahmood Kot via Shikarpur-White oil pipeline extension form Mahmood Kot to Faisalabad-Thallian- Tarrujabba)
  - Buffer Oil terminal at Bin Qasim - 300,000 MT Capacity
  - Bulk Oil Storage Shikarpur - 50,000 MT Capacity
  - Bulk Oil Storage Mahmoodkot - 100,000 MT Capacity
  - Bulk Oil Storage Faisalabad/ Gatti - 50,000 MT Capacity
  - Bulk Oil Storage Machike - 100,000 MT Capacity
  - Bulk Oil Storage Terminal at Thallian - 16,0000 MT Capacity
  - Bulk Oil Storage Terminal at Tarrujabba - 50,000 MT Capacity
  - Supply to interim storages at Shikarpur-Mahmood Kot & Faisalabad
- System optimization
- Hydraulic Analysis will be conducted with different line sizes to select the most economical size. Capital cost of pipelines and pumps was calculated and pumps operating cost was also estimated for 2 years and 5 years operations. Pipelines sizes have been selected such that the system pressure does not exceed the 150 # piping class allowable pressure (i.e. 19.0 bar with 25 – 30% allowance for surge pressure).

- Facilities description

The proposed system will consist of the following facilities:

Scraper Launcher / Receiver & Interface Detection

- The products will be dispatched & received through Scraper Launcher & Receiver
- Located on the scraper launchers & receivers is a scraper detector. This will inform the Control Room operator when the scraper has been received.

To determine the interphase arrival between product batches of MOGAS & HSD, a densitometer is proposed to be installed downstream of the scraper receivers. This meter can detect even minute changes in product density. The density is provided at Control Room.

- Flow Measurement
- Ultrasonic type Flow meters are proposed at both ends of the pipeline to measure the flow of MOGAS & HSD/ products being received /dispatched. Although the accuracy of Ultrasonic Flow meters is relatively low as compared to the Turbine or PD meters, these are proposed being more economical. Since custody transfer of oil is done through manual dip, flow meters will serve internal control only.
- Slop Tanks
- A slop tank is proposed to be installed at the Jetty Head, Pumping area and Buffer Terminal.
- The slop tank will be used to collect the transmix quantities of oil during batch pigging. Oil drained from un-piggable portions of pipeline will also be collected in the slop tanks.

Frontier Works Organization BOT Dte

Overview of the feasibility study (4)

- SCADA System
- The control system proposed for the pipeline is based on the concept of supervisory control from the main control room at buffer Oil Terminal. A SCADA System shall be provided to ensure efficient management and control of the pipeline operations. The salient features of the system are given below:
- Pipeline Management

  The SCADA system shall provide a single database that can be accessed by different disciplines independently. The system shall provide the following management functions:

  - Graphical presentation of operating conditions and status
  - Batch scheduling and tracking
  - Maintenance planning
  - Product accounting and reconciliation
  - Historical logging of events and alarms
  - Trending selected variables
  - Report generation and printing
- Pipeline Control
- To ensure that the pipeline system is operated efficiently and safely, it is necessary to exercise control along the entire length of the pipeline. The SCADA system shall provide the following:
  - major control functions:
  - Pump monitoring and control
  - Valve position monitoring and control
  - Profile monitoring and control
  - Energy optimization
  - Regulatory controls
  - Graphical presentation of alarm conditions
  - System diagnostics and fault reporting
  - Emergency shut-down system
- Pipeline Leak Detection
- Pipeline leak detection systems are generally based on the following techniques.
  - Pressure monitoring
  - Flow monitoring
  - Volume Reconciliation
  - Flow Balance
  - Dynamic modeling incorporating corrected volume, unexpected flow and pressure
- The type of information required for pipeline leaks consists of the following:
  - Detection of the occurrence of a leak
  - Detection of a leak already present in the line
  - Leak location

  For an effective leak detection system a combination of the above mentioned techniques is generally incorporated to analyses incoming data allowing detection sensitivity to be maximized while simultaneously reducing false alarms.
- Telecommunications System
- The telecommunication system would be designed to provide a dedicated network along the pipeline route, with main control center located at Buffer Terminal.

KPMG

Frontier ... BOT Di... ...ization

Overview of the feasibility study (5)

Project progress and FWO consultation with key stakeholders

Presentation were made in the Ministry of Petroleum & Natural Recourses (MoP & NR) on the project scope on February 18th, 2016, and subsequently the Task Force formed by Federal Secretary for Petroleum & Natural resources with representation from MoP & NR, OCAC, PARCO, PSO, OGRA and FWO. The mandate of task force included:

- To identify the Stakeholders involved at different stages of the Project and to highlight their respective nature of interaction in the Project Proceedings.
- To examine the proposal for the Construction of new oil jetty at Port Qasim with all requisite facilities and to work out the basis of tariff of handling MS and HSD
- To analyze the proposed oil storage plans at Port Qasim, Mehmood Kot, Thallian and Tarrujabba.
- To examine the details of proposed investment initiative for existing white oil pipeline project jointly by FWO and PAPCO.
- To analyze the project details for construction of Mehmood Kot-Machike- Thallian-Tarrujabba-pipeline, its ROW from Parco and its economic viability.
- To examine the issues of throughput for new pipeline project in view of the demand potential in the concerned areas, its required diameter and allied facilities.
- To determine a basis for the tentative tariff for the parallel pipeline and corresponding modalities with respect to IFEM.
- To formulate modalities for initial pipeline fill for the new pipeline project.
- To examine the concessions and other related approvals required from the government.
- To submit a report in the matter to Secretary, Petroleum by 15th March, 2016.

First Task Force Meeting

The first task force meeting was held at Ministry of Petroleum & Natural Resources at 4th April 2016 under the Chairmanship of DG Oil. The proposal as submitted by FWO was discussed in detail and it was decided that FWO will review and revise the projections of the project plan in the light of discussion held in the meeting. it was also directed by the Task Force that FWO, PAPCO & PARCO would meet in OCAC in order to achieve clarity with regard to the construction of New Oil Jetty and issues related to Initial pipeline fill and pipeline tariff.

Consultations with OCAC

Infrastructure development is the key to long term economic gains in any sector. In petroleum sector Storage and pipeline connectivity is the major future requirement. Minimum storage of 27 days is an essential requirement to replenish the stock in emergency situations. The strategic requirement of minimum storage cannot be effective unless the product is moved through pipeline infrastructure instead of Road Transport, even the storage of 40 to 45 days is not enough.

OCAC is anticipated to:

- Coordinate with OMC's and confirm off take through OMC's for the proposed infrastructure.
- Recommend MOP&NR the tariff structure for pipelines.
- Evaluate the proposal and the financial model and recommend the concessions in duty structure as requested by FWO.

A detailed presentation was given to CEO OCAC in which the pipeline volumes were justified and were approved by OCAC. The pipeline volumes have been separately discussed under this section.

Frontier Works Organization BOT Dte

Overview of the feasibility study (6)

Project progress and FWO consultation with key stakeholders – contd..

— 2nd Task Force Meeting

The 2nd task force was held on 8th August 2016, under the Chairmanship of Secretary (P&NR). A presentation was made on the project details and feasibility, after detail discussion/deliberations approval was given to FWO for construction of Oil Jetty for handling of petroleum products along with construction of Pipeline. Furthermore FWO was directed to consult OGRA with regard to revision/reconciliation of IFEM related calculations based on Ministry of Petroleum & Natural Resources would approach OGRA for Pipeline tariff determination.

— Consultations with Oil & Gas Regulatory Authority (OGRA)

— The aim of OGRA is to safeguard the public interest through effective and efficient regulation in the midstream and downstream petroleum sector.

— The analyses and projection of saving in the IFEM network and correlation with the tariff thus suggested for the future storage and pipeline infrastructure by FWO is in the OGRA preview, including.

— The present and the future savings in the IFEM surcharge and its impact on the pricing formula of petroleum products can be worked out by OGRA.

- Coordination with the midstream and the downstream stakeholders. Utilization of local refineries products in the pockets where pipeline infrastructure is suggested. Review the concessions thus demanded by FWO in light with the tariff demanded.

In the second task force meeting OGRA was asked to check the IFEM saving through FWO proposed pipeline infrastructure. The case was taken up with OGRA and IFEM saving were presented to OGRA officials, to which OGRA have agreed as per FWO understanding.

- The IFEM saving working as submitted by FWO to OGRA have been analyzed separately under this section of the report.

— Consultations with Port Qasim Authority

- A detail presentation was made to Chairman Port Qasim Authority along with the feasibility regarding the subject project, after number of meeting with PQA officials, an unsolicited proposal was submitted to Port Qasim Authority. According to proposal, PQA will be paid minimum guaranteed 1.13 USD/MT royalties, which amounts to 268 Million USD over the course of the concession period for the project to which PQA agreed to undertake the expansion of petroleum products handling facilities at Port Qasim by setting up Integrated Oil terminal & Storage as proposed by Frontier Work Organization. Based on the unsolicited proposal submitted to PQA for development of Oil Jetty and Expansion Pipeline network, PQA requested FOTCO to give its consideration regarding the project/ unsolicited proposal by Frontier Works Organization (FWO) since FOTCO has the first of refusal for development of any Oil related infrastructure at Port Qasim under article 3.13.3 of the Implementation Agreement dated 8th December, 1992 between FOTCO and PQA.

— Offer from OMC for Storage Charges at Port Qasim

- **After several meetings & negotiations with one of the leading oil** marketing company, a consensus was reached, according to which the OMC will charge 0.95 USD/MT for Storage facilities at Port Qasim.

— Investment offer from Santex Energo Export

- Santex Energo Export, a European company having a consortium of world renowned companies in the field of petroleum, refinery, pipelines and other petroleum projects with or with financing, have shown intent to provide complete package of financing the subject project. The company has also been working with Pakistan Air Force for equipment and services for JF-17 aircraft. The financial model has been made on the basis of financial offer made to Port Qasim Authority by FWO and the financial terms received by Santex Group

Overview of the feasibility study (7)

- **FWO petroleum products growth projection**
- FWO management expects that the total trade to take place via CPEC route is expected to be at least 10% of total China trade. The management of FWO expects that the total number of trucks are likely to be around 25,000 Trucks every day is to and from Gwadar and Khunjrab Pass, while for the purposes of feasibility study, FWO management has considered the following traffic volumes for CPEC.

2018-19	0.25% of Chinese Trade
2019-20	0.63% of Chinese Trade
2020-21	1.25% of Chinese Trade
2021-22	1.9 % of Chinese Trade
2022-23	2.5 % of Chinese Trade
2023-24	FWO kept the volume max at 2.5% growth rate (China growth rate is minimum 6%

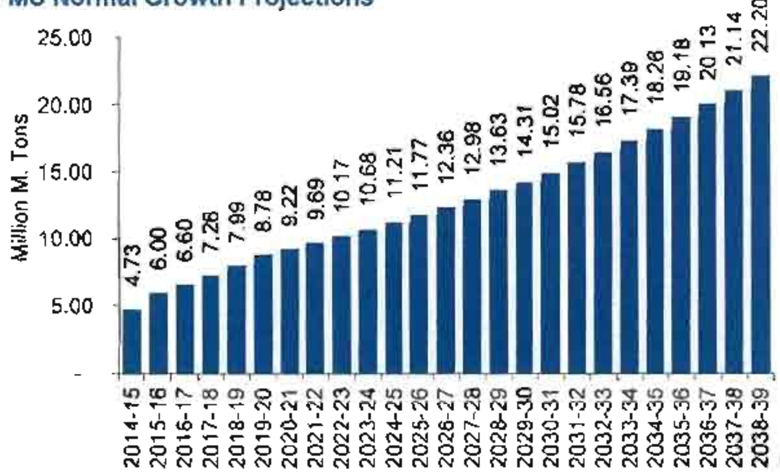
- FWO management has considered the following assumptions for estimating the CPEC specific fuel requirements.

China Annual Containers Export	181,635,245	Nos
Pakistan	**2674**	**KM**
Trucks (2.5% Of Volume)	12,656	Per Day One way
Trucks (Return Traffic)	**12,656**	**Per day One way**
Trucks (total Traffic)	25,311	Per Day Both ways
Fuel Average	**3**	**KM / Liter**
Total HSD per day	22,283,333	Liters
Total Tons per day	**18,941**	**Tons**
Total Tons per Annum	6,999,463	Tons

- Based on the calculated traffic expectations, FWO management has projected the volume till the time period of the analysis, i.e. 2038-39 with a GDP growth rate of 6% which caters only the growth of Chinese economy and FWO share remains at 10%, however FWO calculated the numbers at less than2.5% shares in Chinese economy against the anticipated share of 10%.

  For pipeline project, the project life is estimated at 50 years and 40 years life for jetty. However, for project variablity assessment 20 years have been considered by FWO management for pipeline and jetty projects.
- Motor Sprit demand is expected to grow at a steady rate of 10% per annum till 2019-20 and after that the growth rate will be much lower, i.e. 5% per annum. Reference OCAC (Pakistan Oil Report 2014-2015)

MS Normal Growth Projections



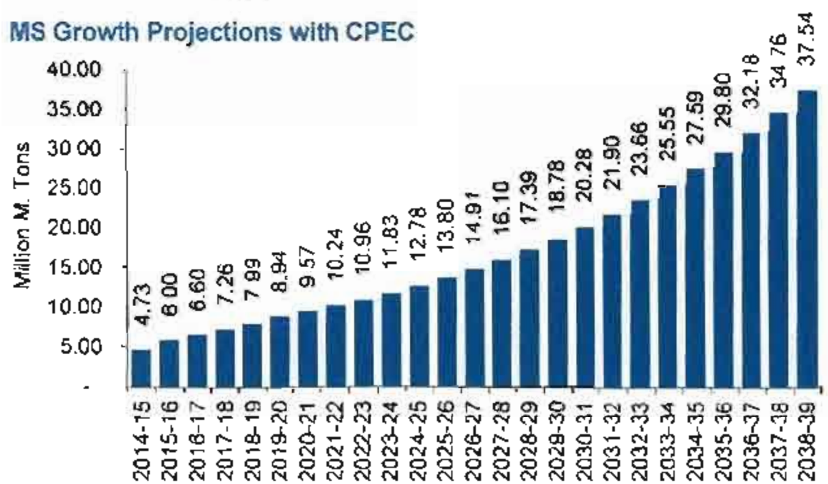
Frontier Works Organization BOT Dte

7

Overview of the feasibility study (8)

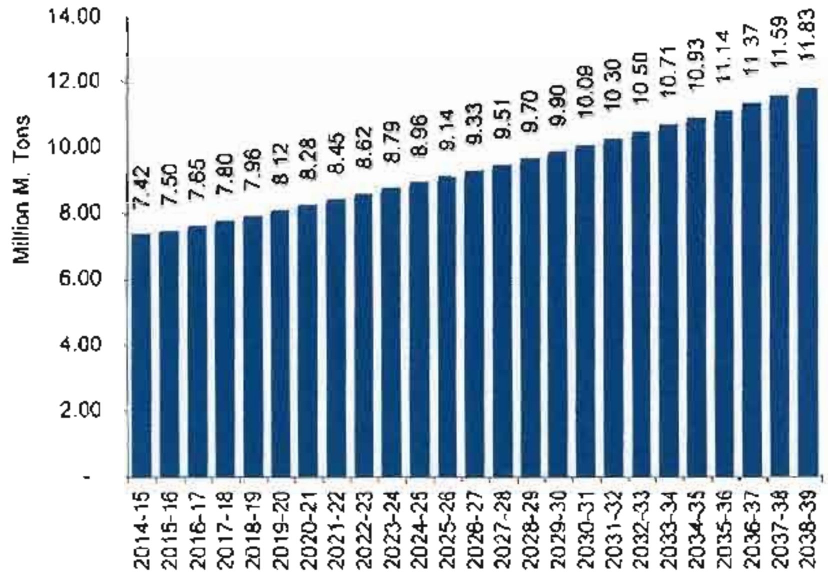
- FWO petroleum products growth projection – contd..
- In year 2019-2020 to 2021-2022, FWO management expects a growth rate of 2% due to CPEC economic Impact in addition to normal growth rate (10%) is considered as per OCAC Pakistan Oil report 2014-15. In the year 2022-2023 to 2038-2039 a growth rate of 3% has been considered due to CPEC economic Impact, in addition to normal growth rate (5%) is considered as per OCAC Pakistan Oil report 2014-15. The volumetric growth from the year 2014-15 to 2018-19 given below are kept as per the OCAC Pakistan Oil report 2014-15 and no CPEC impact have been considered for the said period.

MS Growth Projections with CPEC



- Diesel demand is expected to grow at a steady rate of 2% per annum. FWO assumed that the 2% increase in volume comprises of the following components: (a) 40% of the 2% increase in production from 2014 -15 onwards as forecasted by OCAC is due advancement and efficiency enhancement projects such as isomerization and DHDS planned by the refineries. (b) 60% of the 2% is due to expansion of projects and will required equivalent increase in the import of crude by sea.

HSD Nomal Growth Projections



- As per all economists and government estimates, 2.5% to 3% addition is expected in GDP of Pakistan due to spillover effect of CPEC projects, however FWO has considered a growth of 3% as CPEC impact on national economic growth which includes 3% enhanced utilization HSD per year, the same figure is considered for the next 25 years.
- The impact of CPEC growth on GDP of Pakistan is expected to take effect from year 2021-22, for this specific reason the impact while calculating the volume with CPEC growth impact has been taken from 2021-22.

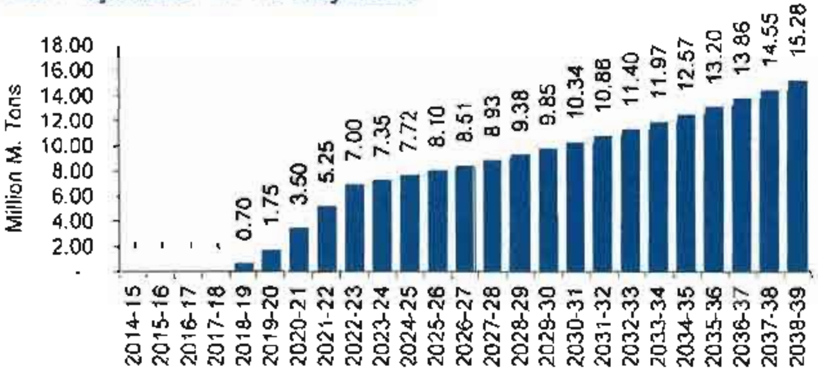
Overview of the feasibility study (9)

— FWO petroleum products growth projection – contd..

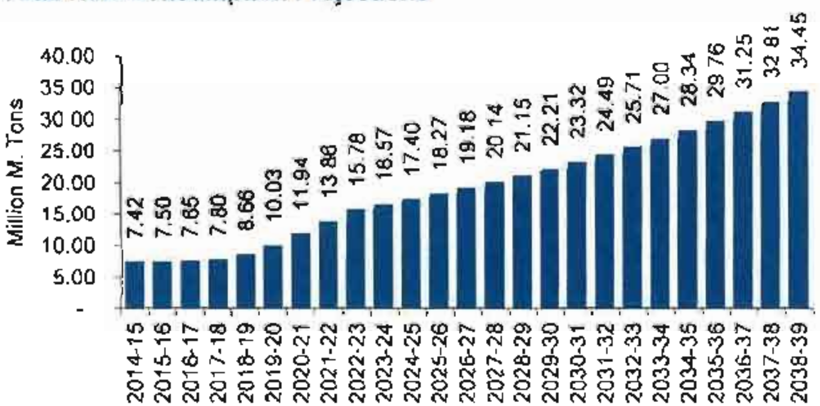
HSD Projections with CPEC Pakistan specific impacts

— FWO has assumed that the CPEC traffic impact will increase rapidly between year 2018-19 to 2022- 23 and from year 2022-23 it will increase at steady pace of 5% every year as depicted below:

HSD Projections - CPEC only traffic



Total HSD Consumption Projections



Total HSD + MS Consumption Projections - baseine

KPMG

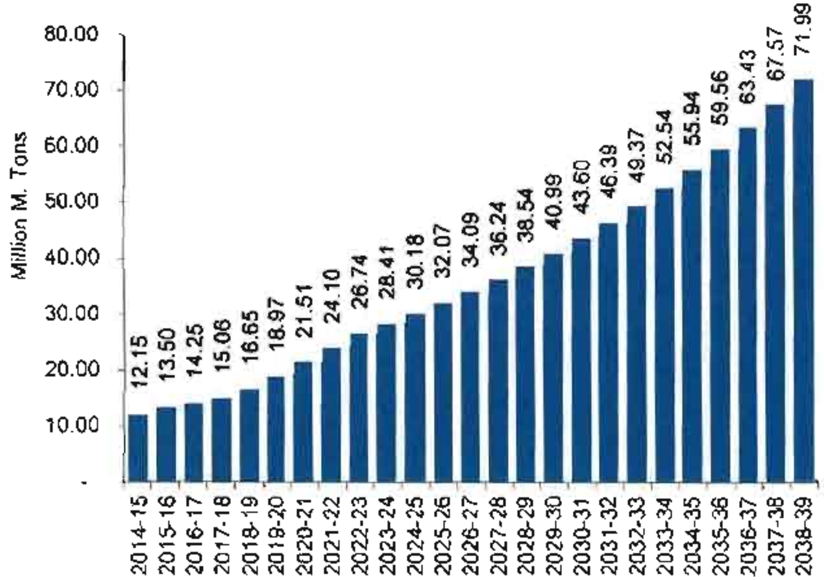
Frontier Works Organization BOT Dte

7

Overview of the feasibility study (10)

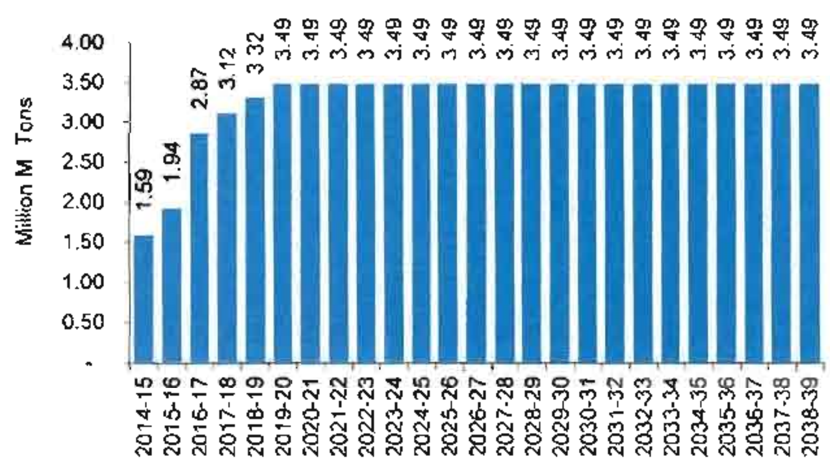
- FWO petroleum products growth projection – contd..

Total HSD + MS Consumption Projections - with CPEC

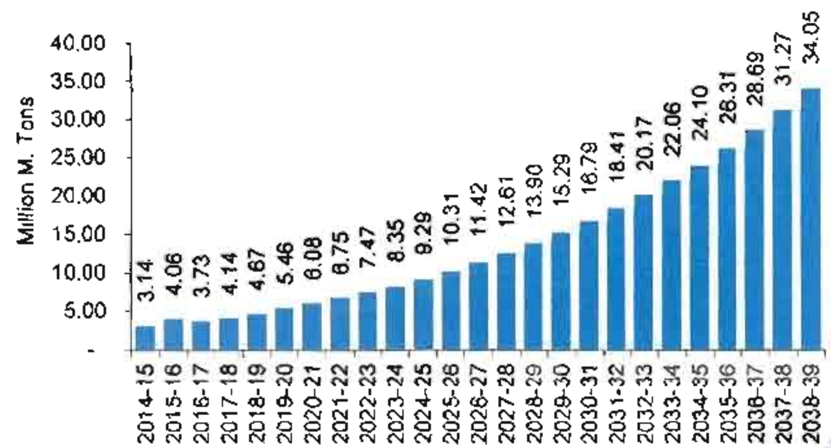


- Production and import of HSD & MS
- Import volumes have been calculated by FWO after subtracting production volumes of a specific year from the total projected demand calculated above.
- The projections for present & future 5 years are taken from OCAC Pakistan Oil report 2014-15. FWO interpolated data for next 20 years and import figures are the projected demand figures which have been assumed as indicated earlier in this report minus the productions numbers of OCAC.

MS Production projections



MS import projections



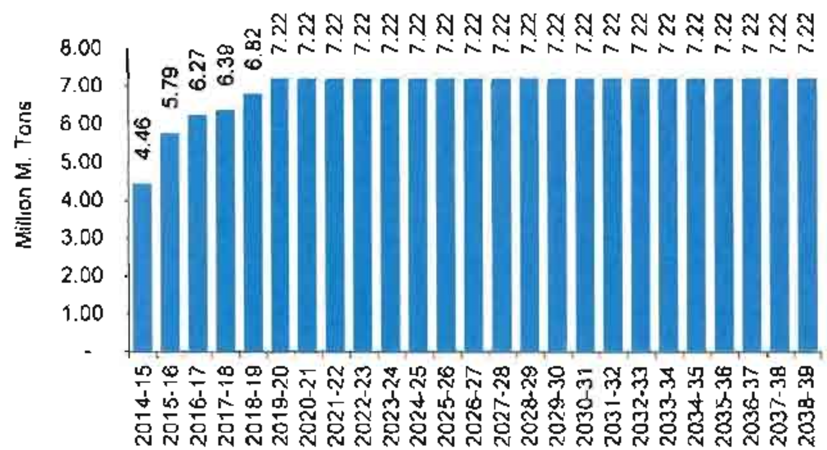
Frontier Works BOT Division

7

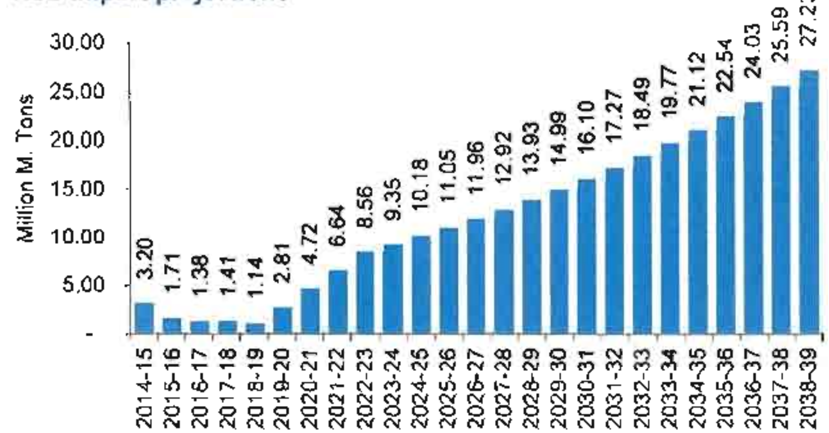
Overview of the feasibility study (11)

- FWO petroleum products growth projection – contd..

HSD production projections

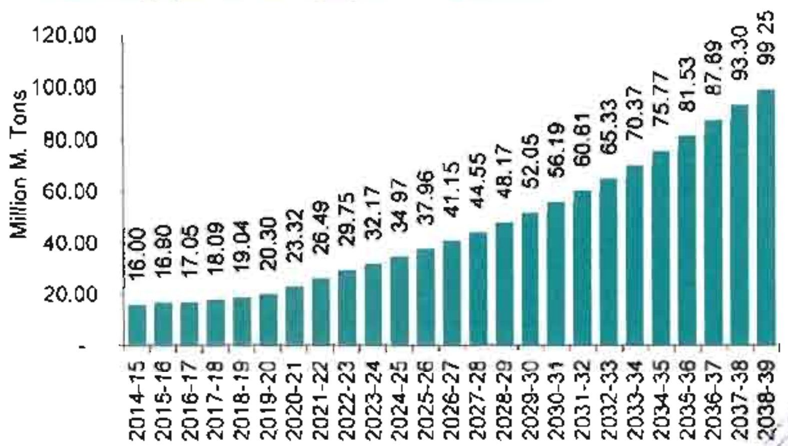


HSD import projections



- FWO Volume handling projections at port facilities
- For undertaking volume projections of imports at ports, FWO has used OCAC current numbers and future expansions; FWO has performed projections based on FWO estimates for future for MS and HSD. Similarly for export, FWO has kept the numbers same as per OCAC except naphtha for which FWO has assumed local refinery utilization will increase.
- Total through put volumes are addition of all the imports and exports projections of a specific years taken from the import & export analysis. Kemari if working at full efficiency can manage practical and realistic throughput volumes of 20 Million MT, which will be achieved in year 2019-20. For the calculation of volumes for the new jetty only the excess volumes from year 2020-21 were considered. Based on all FWO estimates, consolidated volumes projections have been summarized as follows:

Total throughput volume projections at Kemari



KPMG

Frontier Works Organization BOT Dte

7

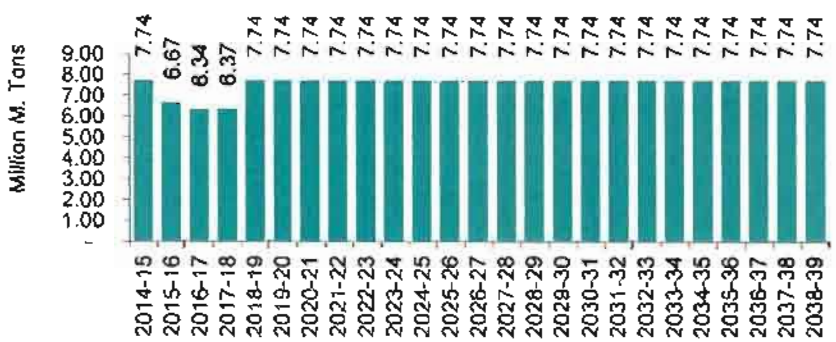
Overview of the feasibility study (12)

- FWO Volume handling projections at port facilities

Excess volume based on projections at Kemari

- As per FWO projections, the proposed FWO Jetty including all the existing jetties will reach their maximum design capacity by 2024-25.
- FWO kept the numbers of FOTCO Jetty as same and kept the HSD volumes import priority in favor of FOTCO against KPT.

HSD, HSFO and Crude handling projections at FOTCO



- FWO Pipeline projected volumes

Pipeline volume projections are based on the average yearly consumption of the depots / Locations and are based on future estimates. The MS future estimates comprise of:

- 10% (Normal Growth till 2019-20)
- 2% to 3% (Growth due to CPEC impact)

- The HSD future estimates comprise of:
  - 2% (Normal Growth)
  - 2.5% (Growth due to CPEC impact)
  - 6,999,436 (Calculated logical figures for the Year 2022-23) and a constant 5% growth in the coming years
- Volumes are obtained by deducting the local production volumes as envisaged by OCAC. It is assumed that the CPEC volumes would be dispensed via following Bulk Stations (that will be enhanced for CPEC)
  - Shikarpur
  - Mahmood Kot
  - Faisalabad
  - Machike
  - Thalian (New location)
  - Tarrujabba
- Total volumes in Year 2019-20 are projected at 8,234,985 MT out of which 1,516,891 MT bleeds at Shikarpur through White Oil Pipeline (WOP). The remaining 6,695,491 MT is divided into two parts where 3,700,000 MT is routed through MFM to Machike and the balance 2,995,491 MT is the baseline volume for FOC-1 pipeline for the year 2019-20.

KPMG

Frontier Works Organization BOT Dte

7

Overview of the feasibility study (13)

- Inland Freight Equalization Margin (IFEM)
- MOGAS
- The MOGAS in current situation is being transported through tank Lorries, so the IFEM charges are calculated based on road rates as provided by OCAC

Location	Volume	Freight Rates	Charges
CTL	13,407		
JST	65,843	N/A	
TJB	487,586	-	-
SRNG	100,557	-	-
FAQ	452,246	7,100	3,211,310,983
THL	-	N/A	
SIH	983,331	7,102	6,983,749,771
CPI	957,060	6,337	4,035,218,863
MCH	1,688,239	6,337	10,698,388,988
GATTI	526,114	5,744	3,022,260,007
HBD	113,027	6,337	716,252,366
KAN	93,853		
KIM	294,968	-	-
TWL	616,753	-	-
MHK	907,966	-	-
SSH	563,121	-	-
VHR	769,599	-	-
SKP	620,105	-	-
SNG	241,338	-	-
DLP	321,784	-	-
QTA	278,611	-	-
KMR	2,511,924	-	-
Total Volume	[illegible]		
	TOTAL CHARGES		[illegible]

- HSD
- The HSD in current situation is being transported through multiple sources. In FWO calculation of HSD IFEM charges, White Oil Pipeline (WOP) has been considered to transport the product bleeding at Shikarpur, Mahmood Kot and Gatti Faisalabad. The balance of the product is then divided into two parts, one being transported through MFM line to Machike and the other part through tank Lorries to Northern Punjab and further to Tarrujabba KPK. The final volumes are taken after subtracting the approximate production volumes being supplied through local refineries at different depot location. The IFEM charges are calculated based on road/Pipeline rates as provided by OCAC

Location	Volumes	CPEC TRADE IMPACT	TOTAL VOLUME	%	Difference	Final Volume
CTL	13,407		13,407	0.562	7,535	-
JST	65,832		65,832	0.562	36,997	-
TJB	887,586	198,061	1,085,647	0.562	610,134	-
SRNG	100,557		100,557	0.562	56,513	-
FAQ	750,829		750,829	0.562	421,966	298,583
THL	-	547,393	547,393	0.562	307,635	239,758
SIH	1,749,700		1,749,700	0.562	983,331	766,368
CPI	1,694,056		1,694,056	0.562	952,060	741,997
MCH	3,003,984		3,003,984	0.562	1,688,238	1,315,745
GATTI	1,224,387	369,843	1,594,230	0.562	895,957	698,273
HBD	201,115		201,115	0.562	113,027	88,088
KAN	93,853		93,853	0.562	52,745	-
KIM	294,968		294,968	0.562	165,772	-
SWL	616,753		616,753	0.562	346,615	-
MHK	907,966		907,966	0.562	510,277	-
SSH	563,121		563,121	0.562	316,474	-
VHR	769,599		769,599	0.562	432,514	-
SKP	620,105	634,566	1,254,671	0.562	705,125	-
SNG	241,338		241,338	0.562	135,632	-
DLP	321,784		321,784	0.562	180,843	-
QTA	278,611		278,611	0.562	156,580	-
KZD	N/A			0.562		-
KMR	2,511,924		2,511,924	0.562	1,411,702	-
TOTAL	[illegible]		[illegible]			[illegible]

7

Overview of the feasibility study (14)

- Inland Freight Equalization Margin (IFEM)
- IFEM TOTAL CHRGES IN CURRENT SITUATION MOGAS & HSD
- The rates are calculated based on product transportation through existing White Oil Pipeline and road network for both MOGAS & HSD for the reason of calculating total current IFEM charges being paid by Government of Pakistan.
- The throughput charges for FWO proposed Oil pipeline are taken from the financial model.
- The proposed pipeline caters for throughput of the product/crude to Machike, Thallian and Tarrujabba KPK.
- The calculations are also based on the assumption that the Metric Ton volume of MOGAS requirement for northern Punjab and KPK will be transported via pipeline, ensuring no tank Lorries for the subject purpose.
- SAVING TO GOVERNMENT IN IFEM BY FWO PROPOSED PIPELINE
- As per the detailed calculation it's evident that the savings to Government of Pakistan would be significant.

Pipeline Distribution			
Location	Quantity	Frieght Rate	Charges
WOP bleeding at Shikarpur	88,088	1001.1262	88,205,302
Mahmood Kot to North(Minus SKP)	4,060,724		
Bleeds at Mahmood Kot	124,015		
Bleeds at GATTI	270,789	498.2733	134,926,929
DLP	22,604	1,433	32,384,414
Balance for MFM	3,665,920	485.1294	1,778,445,578
Road Transportation from Macheki to Tarujaba	176,688	2,107	372,212,478
Road Transportation from Macheki to Chaklala	153,270	1,437	220,320,215
Road Transporation from Macheki to Sihala	238,983	1,350	322,683,689
TOTAL THROUGH HSD			2,949,178,604
TOTAL THROUGH MOGAS			30,665,790,927
TOTAL			33,614,969,532

IFEM CHARGES FOR MS VOLUME WITH FWO				
Location	Vloume	Freight Rates	Toatl CHARGES	FWO PL Charges
Kemari to Thallian	1,548,604	4,383	6,787,418,284	4,360,868,864
Kemari to Faisalabad	526,114	2,056	1,081,778,245	
Kemari to Macheki	2,640,259	3,287	8,678,470,071	4,541,314,280
			16,547,666,600	8,902,183,144

Sr/No	Total IFEM Savings	Saving through FWO Proposed Infrastructure
1	14,118,125480	5,215,942336

7

KPMG

Market overview

Overview of the feasibility study (15)

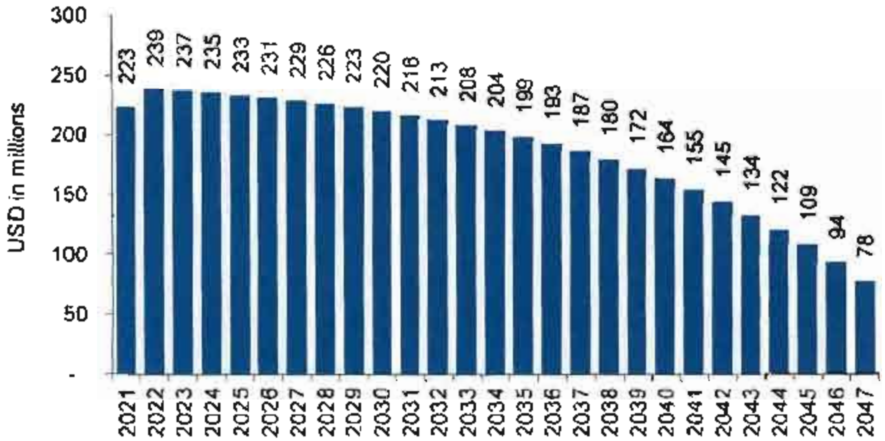
- Project economic and financial overview

Project IRR	16.81%
Equity IRR	34.55%
Equity NPV	461
Payback Period (Years)	3.99
Pipeline Capacity Reached (Years After COD)	0.50
Jetty Capacity Reached (Years After COD)	1.50

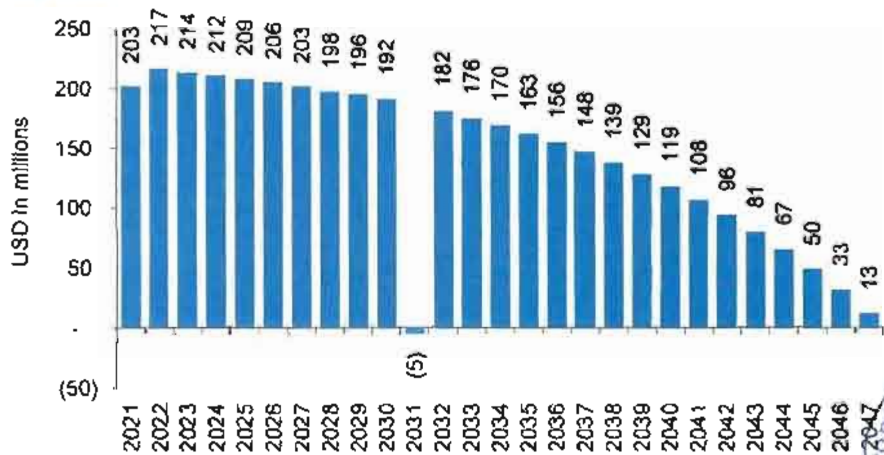
- Project capital costs

Description	USD Millions
Land Cost	2.00
Jetty to Pumping Station	4.57
Mahmoodkot to Faisalabad	111.18
Mahmudkot to Tarrujaba	31.32
Faisalabad to Machikai	180.86
SCADA	20.00
Jetty Cost for structural imp & increasing the Draft	50.00
Construction Cost	**397.92**
Escalation	67.13
Contingencies	7.96
EPC Cost	**473.00**
Design, Supervision & Consultancy	14.19
Management Fees	4.73
SPV Cost	1.00
Insurance	4.73
Development Cost	**24.65**
Pipeline Fill Cost	81.00
Interest During Construction	51.52
Financing Cost & Fees	66.36
Reserve Requirements	70.17
Total Project Cost	768.70

Gross profit



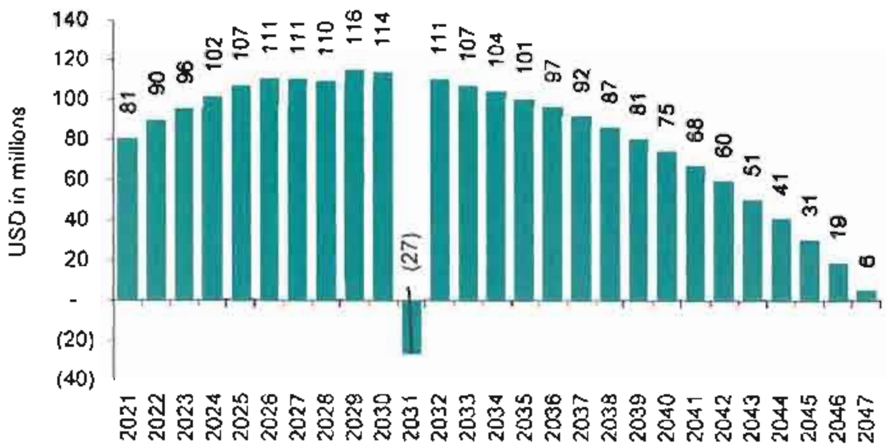
EBITDA



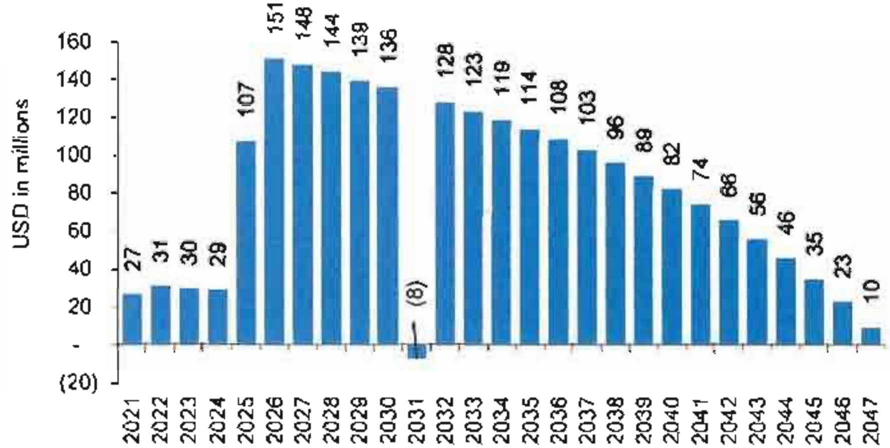
Overview of the feasibility study (16)

— Project economic and financial overview – contd..

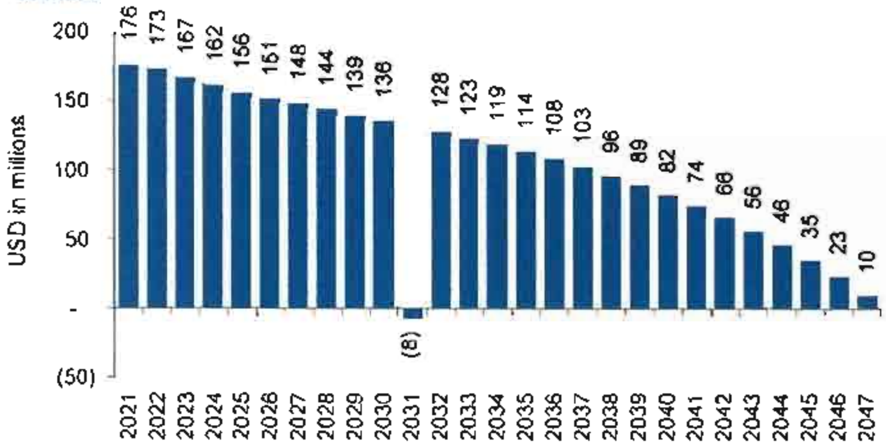
EAT



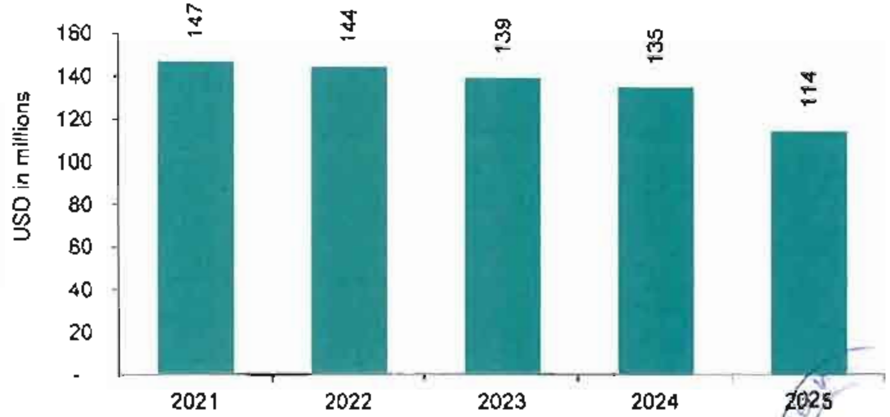
Cash flow available for dividends



CFADS



Debt Servicing



KPMG

30

Overview of the feasibility study (17)

- Project economic and financial overview – contd..
- Key assumptions

Project Cost Assumptions	
Monthly Land Rental (USD/Acre)	1500
Required Land (Acres)	50
Construction Cost Escalation	8%
Contingencies	2%
Design & Supervision	3%
Management & Consultancy	1%
SPV Cost (Mn)	1
Insurance	1%
Mobilization Advance	10%
Pipeline Fill Cost	81

Financing Assumptions	
Debt	85%
Equity	15%
Cost of Equity	10%
6-Month LIBOR	0.87%
Tenor	11.0
Grace Period	3
Credit Spread (Including hedging & interest)	5%
Arrangement Fees	2%
Agency Fees (Mn)	1
Commitment Fees	0.50%
DSCR	1.20

OPEX Assumptions	
Operating Costs (% of EPC Cost)	2.0%
Maintenance Costs (% of Const Cost)	0.10%
Major Maintenance Costs	70.95
Operating Cost Growth	10.0%
Maintenance Cost Growth	7.0%
Lease Growth	7.0%
Lease Expense (Monthly)	0.42
Insurance (% of Revenue)	1.0%
Hospitality charges OMC (USD)	1.22

Revenue Assumptions	
Oil Handling Charge (USD/MT)	6.00
Throughput Charge - New Pipeline (USD/MT/Km)	0.045
Handling Escalation Frequency (Years)	200.0%
Throughput Escalation Frequency (Years)	2.00

Oil Handling		
Maximum Jetty Capacity (MT/Year)	9,000,000.00	
	MOGAS	HSD
Base Year Demand (MT)	3,833,960	2,562,986
Demand Increase on COD (%)	35.0%	8.0%
Capacity Utilization	100%	20%
Demand on COD (MT)	5,175,846	553,605
Throughput		
Maximum Throughput	6,000,000	
Annual Throughput Increase	8%	

KPMG

Frontier Works Organization BOT Dte

Overview of the feasibility study (18)

- Project economic and financial overview – contd..
  - Key assumptions – contd..

Revenue - contd..	MHD - GAT	MHD - MCK	MHD - THL	MHD - TJB
MOGAS				
Distance (Km)	284	364	596	746
Base Year Demand (MT)	461,898	1,195,364	740,397	292,274
Demand Increase on COD (%)	35%	35%	35%	35%
Capacity Utilization	80%	80%	80%	80%
Demand on COD (MT)	498,850	1,290,993	799,629	315,656
HSD				
Base Year Demand (MT)	419,847	979,644	4,822,475	876,391
Demand Increase on COD (%)	21%	21%	21%	21%
Capacity Utilization	20%	20%	30%	55%
Demand on COD (MT)	101,603	237,074	1,750,558	450,138

Tax Assumptions	
Corporate Tax Rate	33.0%
Initial Allowance	25.0%
Alternate Corporate Tax	17.0%
Turnover Tax	1.0%
Tax Depreciation Rate	10%

Royalties charges	Per MT
1-5 Years	1.13
6-10 years	1.25
11-15 years	1.40
16-20 years	1 55
21-25 years	1.70
26-30 years	1.85

Pipeline Fill Assumptions	
Pipeline Volume (m3)	139,047
MOGAS %	55.3%
HSD %	44.7%
MOGAS Conversion Factor	0.75
HSD Conversion Factor	0.85
Total HSD (T)	53,025
Total MOGAS (T)	57,718
MOGAS Conversion (MT to Litre)	1,359
HSD Conversion (MT to Liter)	1,196
MOGAS Cost (USD/ Liter)	0.57
HSD Cost (USD/ Liter)	0.58

General assumptions	
Model Timing	Semi-Annual
Days in a Year	360
Months in a Year	12
Model Currency	USD
Currency Unit	0.000001
Construction Period (Months)	36
Concession Period (Years)	30
Depreciation Rate	10.0%
m to Inch Conversion	39
Total Pipeline Length (m)	883,000.00
Pipeline Radius (m)	0.20

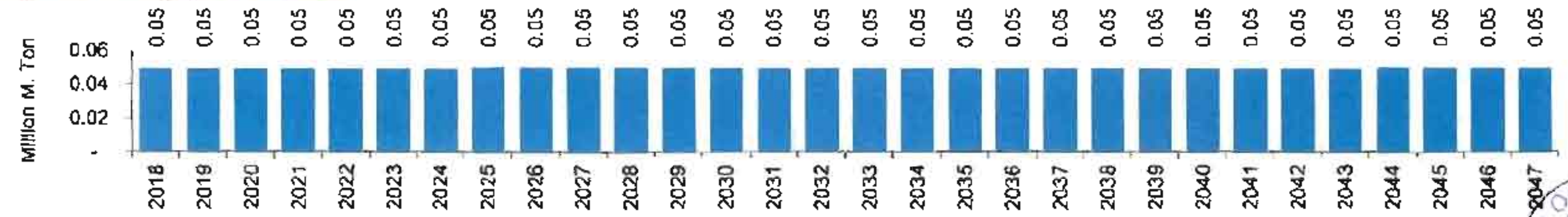
Overview of the feasibility study (19)

- Project economic and financial overview – contd..
  - Key assumptions – contd..

Oil handling demand

Pipeline Throughput - MHD-TJB

Pipeline Throughput - MHD-THL

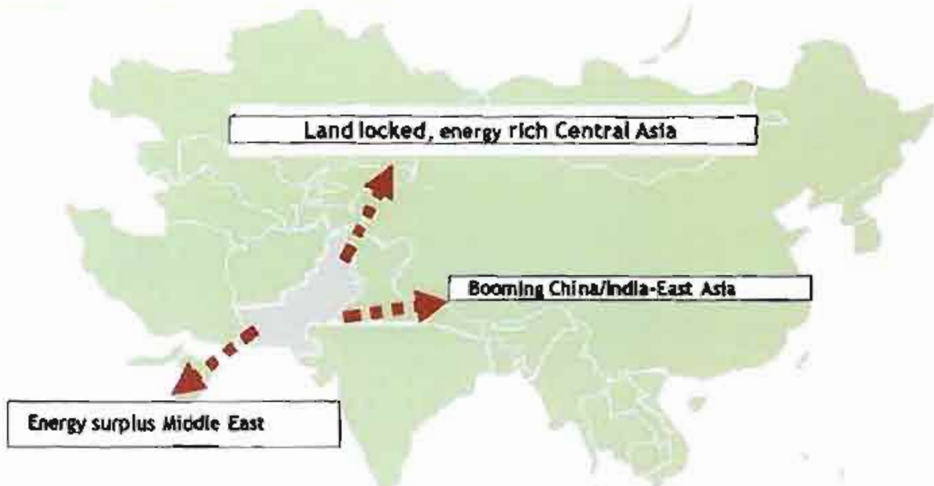


KPMG

33

Market overview (1)

Pakistan's strategic location



Population	192.8 million
GDP	$283.7 billion
GDP per head	$1,471
Population growth	1.7%
Real GDP growth (average)	4.6%
Real domestic demand growth	5.1%
Inflation	6.1%
FDI inflows (% of GDP)	0.5%
Current-account balance (% of GDP)	-1.4%

Source: Economist Intelligence Unit (EIU)

Opportunity to become Asia's trade, energy and transport corridor

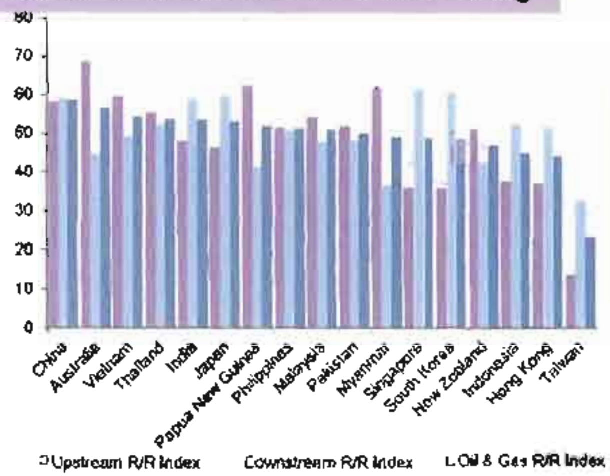
According to BMI Q2 2016, expected Y-o-Y oil demand growth is 2%, compared to the 1.8% in 2015. Whereas there is an average 4% growth per annum in gas consumption

According to BMI Q2 2016 Countries in northern Asia account for the greatest proportion of gas demand. China and Japan alone account for 40.6% of Asia's total gas consumption in 2016.

Leading suppliers of petroleum products & crude petroleum to Pakistan are Saudi Arabia, Kuwait & UAE

BMI Q2 2016 forecast Pakistan refined fuel consumption to increase by 32.2% over the next decade, largely due to growing shift to oil based cars and the growth in vehicle fleet

Asia's Oil & Gas Risk/Reward Index with Ranking



Pakistan comes eights in BMI's Asia Risk/ Reward Index

Market overview (2)

— Overview

— Oil and gas sector in Pakistan has seen phenomenal growth since independence in 1947 when oil quantities produced were scarce. At that time there was no gas production. Over the past half century the petroleum industry has played a significant role in national development by making large indigenous gas discoveries.

— These sources are supplying gas to consumption centers through 9,843 kilometers transmission networks and 71,863 kilometers of distribution system. Pakistan meets about 15% of its oil demand from local sources.

— With rising global energy demand, the oil and gas industry has a wide range of challenges and opportunities across the upstream, midstream, downstream and oilfield services sectors.

— Oil and gas industry

— The Oil and Gas industry is divided into two major sectors, namely, upstream and downstream. The upstream oil sector is also known as the 'Exploration and Production' (E&P) sector. Main operations of the sector include searching for potential crude oil and natural gas fields and subsequently drilling and operating these sites for exploration of these resources.

— The downstream sector includes 'Refining and Marketing' sector which involves refining of petroleum crude oil and the processing and purifying of raw natural gas as well as the marketing and distribution of the final products.

— White Oil & Gas sector in Pakistan comprises the entire chain with Oil and Gas Exploration companies, Oil Refineries as well as Oil and Gas Marketing companies, our focus in this review is on the overall demand and supply scenario for white oil, oil storage, marketing and distribution and white oil pipeline infrastructure in Pakistan.

Petroleum products market in Pakistan

— The consumption of petroleum products registered a moderate growth rate of 5.2 percent (23.7 million tons) during FY 2015-16 compared to previous year's growth of 5.1 percent (22.6 million tons).

— During the year 2016, the main drivers of consumption were transport and power sectors, which registered growth of 56 percent and 33 percent respectively.

— The consumption of Motor Spirit (MS) in transport sector witnessed a growth of around 22 percent during year 2015-16.

— Pakistan State Oil remained the lead player in total energy products supply to the consumers with 56 percent market share compared to 57 percent last year. PSO has lost around 1 percent of market share to other players. PSO was followed by Shell with 10 percent, Attock Petroleum Limited (APL) around 8 percent and Hascol 6 percent.

— PSO despite being remained in the lead has lost its share by 5 percent in Motor Spirit (MS) sale from 47 percent last year to 42 percent during the year. PSO was followed by Shell with 18 percent and Total Parco Marketing Limited (TPML) 9 percent.

— Being the largest Oil Marketing Company (OMC), PSO supplied about half of total High Speed Diesel (HSD) sales with market share of 48 percent down from 50 percent last year. Shell captured around 13 percent followed by Attock Petroleum Limited (APL) with 9 percent and Hascol with 8 percent share of the total sales.

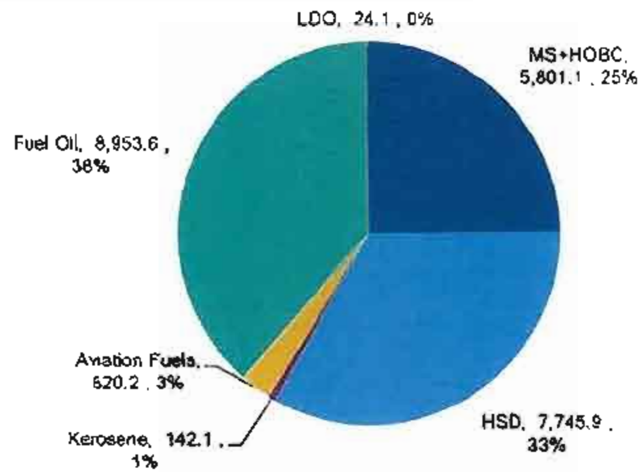
— Fuel Oil (FO) was mainly supplied by PSO with market share of 71 percent up from 67 percent last year followed by APL with 7 percent share down from 11 percent a year earlier and Hascol captured around 5 percent of the FO's market.

Market overview (3)

Petroleum products market in Pakistan – contd..

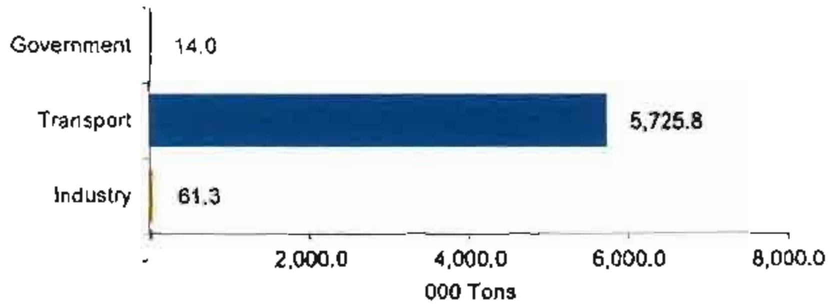
- Total production by the refineries during FY 16, was 11.31 million tons compared to previous year's 11.43 million tons. This year's production fell to 1 percent from 3.5 percent last year. PARCO was the largest and main producer of POL products with 39 percent market share in the total production, followed by National Refinery Limited (NRL) with 19 percent share, Pakistan Refinery Limited (PRL) and Attock Refinery Limited with 14 percent share each. Byco Petroleum Pakistan Limited (BPPL) with 10 percent share.
- The demand for HSD, MS and FO were mostly met through imports as domestic production was not enough to meet the domestic requirements. Around 41 percent of HSD, 73 percent of MS, 14 percent of Jet Fuels and 69 percent of FO of total POL demand in the country during FY 2016.

Refined petroleum products consumption 2015-16

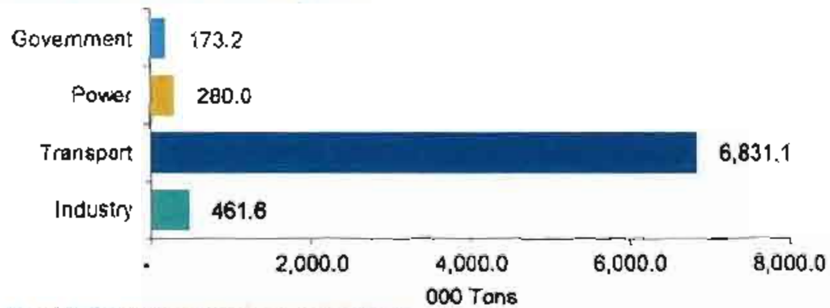


Excluding non-energy consumption – Units in 000 Tons

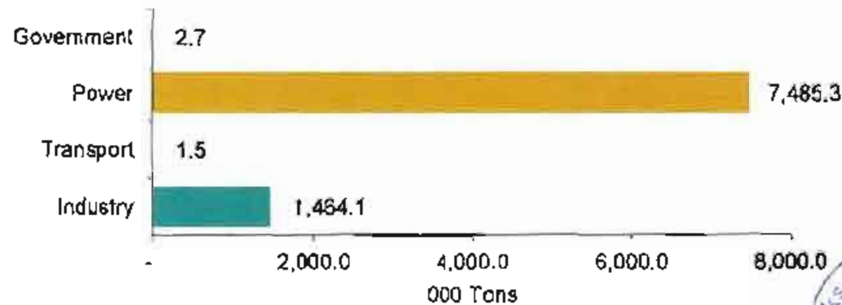
MS+HOBC sector wise consumption



HSD sector wise consumption



Fuel Oil sector wise consumption



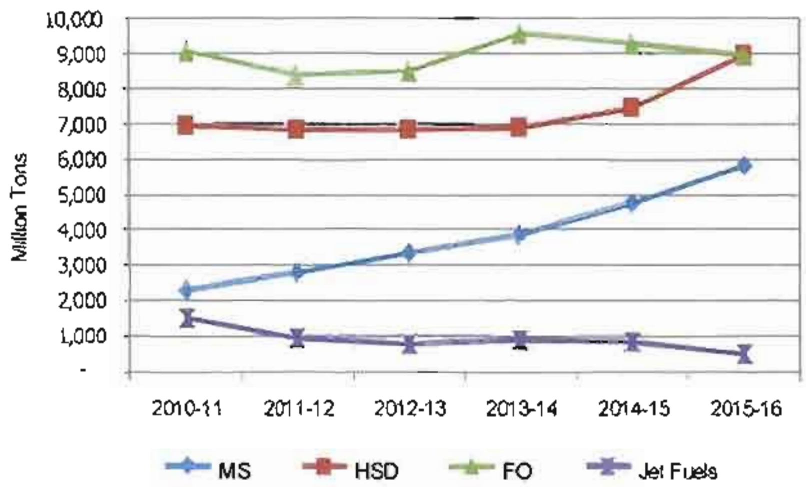
KPMG

Market overview (4)

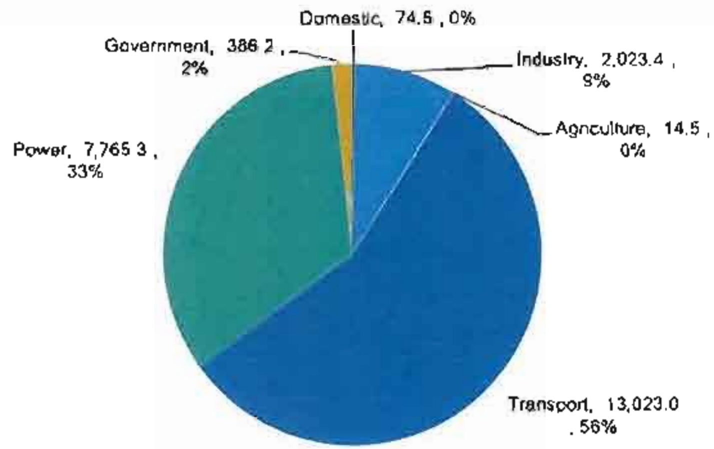
Petroleum products market in Pakistan – contd..

- The sectoral consumption during FY 2016 showed a mixed trend, whereby industrial, transport and government sectors grew by 49 percent, 15 percent and 13 percent respectively as compared to the previous year. The consumption of POL products in agriculture, domestic and power sectors contracted by 61 percent, 16 percent and 14 percent respectively during the same period.
- The consumption of MS increased by 22 percent in FY 2016 compared to FY 2015 which was mainly consumed by the transport sector. This increase may be attributed to lower prices of MS and increased demand for generators due to load-shedding. Similarly, HSD consumption grew by 5 percent over the previous year mainly on account of higher utilization by transport sector as compared to last year.

Consumption Trend of Main POL Products



Sector wise consumption of petroleum products - 2015-16



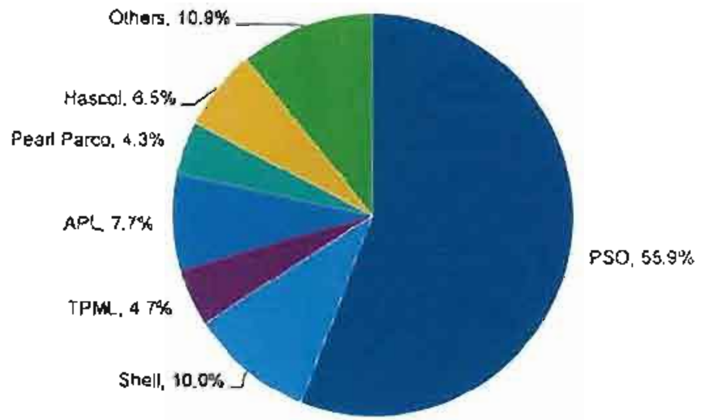
Excluding non-energy consumption – Units in 000 Tons

- In terms of the sector-wise share in POL consumption, the share of transport sector increased by 5 percent from 51 percent to 56 percent during FY 2016 whereas the share of power sector declined by 8 percent from 41 percent to 33. The share of industrial sector increased by 3 percent from 6 percent to 9 percent during current year as compared to the corresponding period last year mainly on account of higher consumption of Furnace Oil by the industrial sector for power generation.
- The historic trend analysis of main POL products such as MS, HSD, FO and Jet Fuels indicates that MS consumption followed steep rise over the years mainly due to rising demand by the transport sector along with increasing demand for generators due to load shedding and lower prices of MS because of steep decline in oil prices in the international market. HSD trend line show more consistent trend up till 2013-14 and slight growth in 2014-15 and more robust rise in demand in 2015-16. FO showed mixed trend whereas Jet Fuels indicates slightly declining trend.

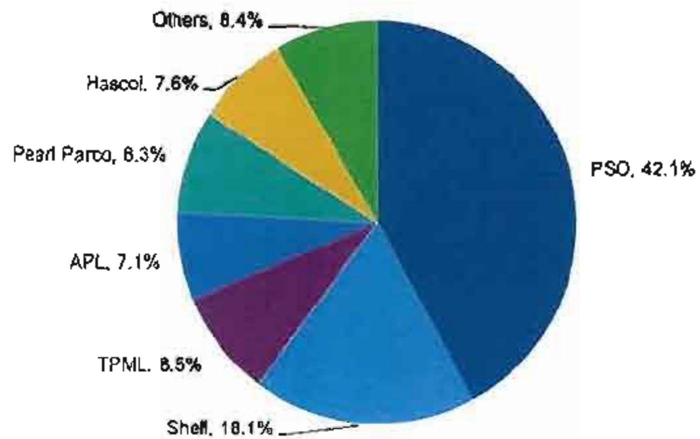
Frontier Works Organization BOT Dte

Market overview (5)

Refined product marketing/ distribution - shares 2015-16



MS product marketing/ distribution - shares 2015-16

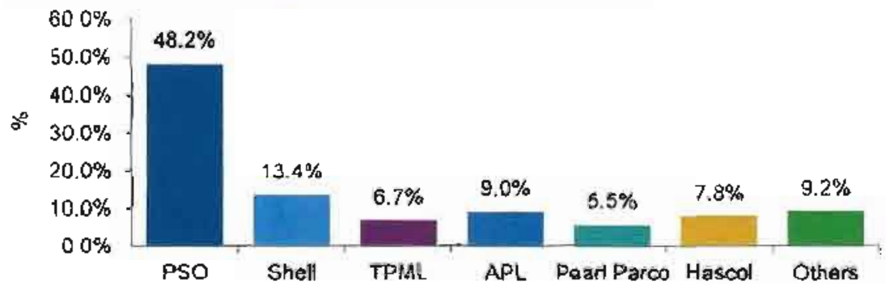


Oil marketing and distribution

— The main supplier of POL products during FY 2016 was Pakistan State Oil (PSO) with 56 percent market share slightly down from 57 percent compared to the corresponding period last year. The second major player was Shell with 10 percent market share. Other major participant, APL lost 2 percent of market share from 10 percent to 8 percent during the same period, whereas TPML and TPPL kept intact their share at 5 percent and 4 percent respectively. Hascol and GOPL have increased their market share by more than 1 percent during the period under discussion. PSO and Shell were followed by APL with 8 percent, Hascol with 6 percent and TPML with 5 percent market share in the supply of petroleum products to the consumers during FY 2016.

PSO acquired 42 percent OMCs' share in sale of MS, however its share declined by 5 percent during FY 2016. Other major OMCs such as Shell, TPML and TPPL have lost some of their market shares whereas main gainers were Hascol and other small OMCs whose share in MS sale has increased by about 4 percent.

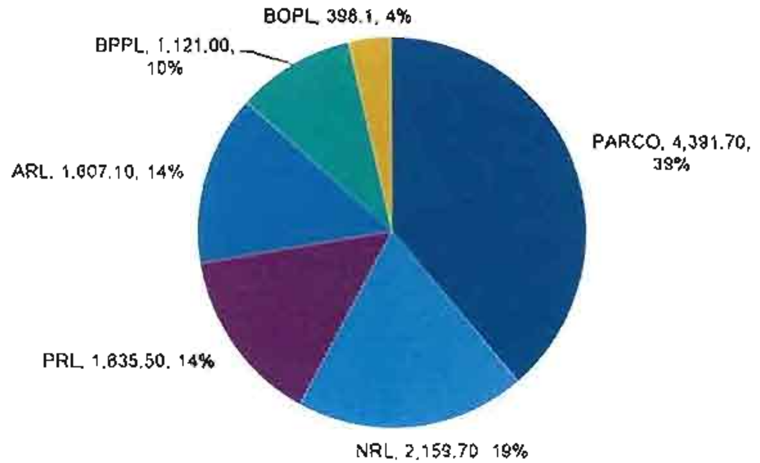
HSD product marketing/ distribution - shares 2015-16



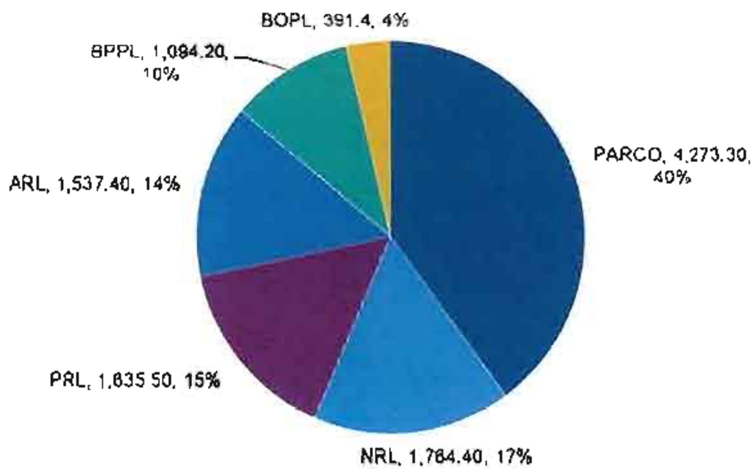
Being the largest OMC and the main supplier, PSO supplied almost half of total HSD sales. However, its market share has declined from 50 percent to 48 percent whereas Shell's share has declined from around 35 percent to 32 percent during the same period.

Market overview (6)

Refineries production 2015-15 (including non-energy products)



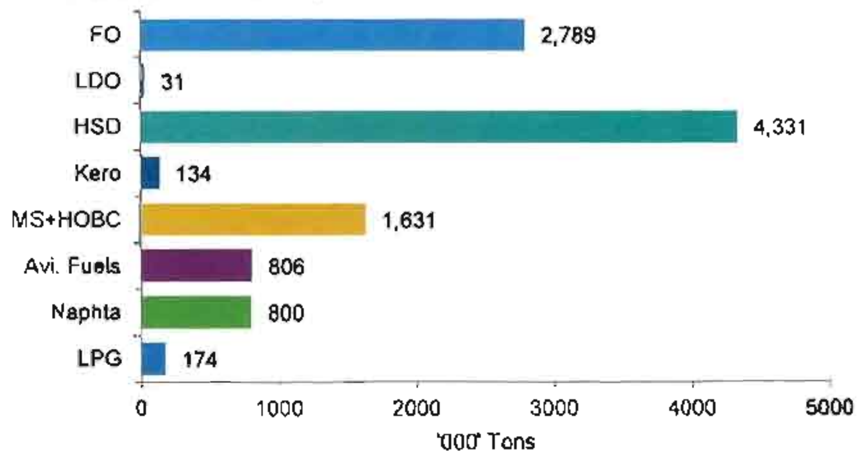
Refineries production 2015-15 (energy products)



Refineries production

- Total refineries production (energy & non-energy) was 11.31 million tons in FY 2016 compared to last year's 11.43 million tons. Total production by refineries during FY 2016 declined by almost 1 percent as against the growth of 3.5 percent last year. This decline may be attributed to 15 percent less production by ARL (due to shut down for maintenance) during the year compared to last year. BPPL registered a growth of 36 percent during the year mainly on account of higher production of FO (60 percent), Naphtha (49 percent) and HSD (25 percent) compared to last year.
- With 39 percent market share, PARCO was the largest and main producer of POL products in the country followed by NRL with 19 percent, PRL and ARL each with 14 percent and BPPL with 10 percent share in the total production. PRL and BPPL have increased market share by 1 and 3 percent respectively whereas ARL and BOPL lost its market share 1 and 2 percent respectively during FY 2016

Refineries production by product - 2015-16

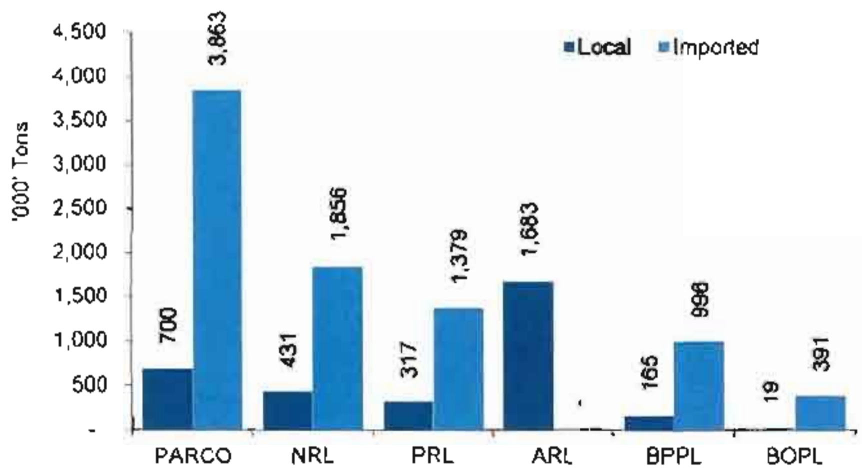


Market overview (7)

Crude Oil Processed by Refineries

— Refineries during FY 2016 processed 11.80 million tons of crude (local and imported) compared to previous year's 11.82 million tons. PARCO processed 39 percent of the total crude followed by NRL with 19 percent and PRL & ARL 14 percent share each. The ratio of local and imported crude was 28:72 in FY 2016 compared to 30:70 during FY 2015.

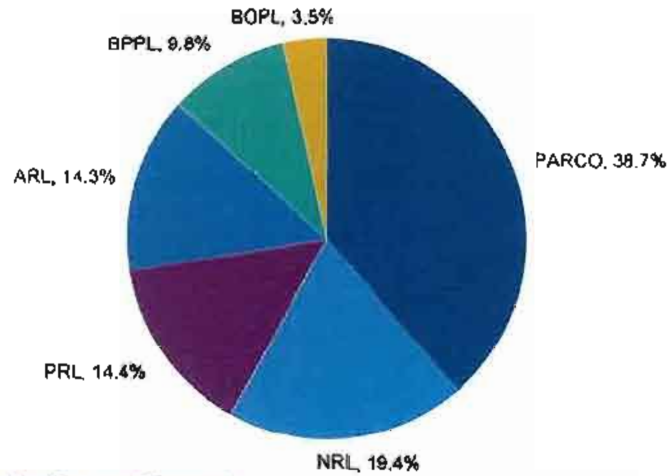
Crude processed by refineries - 2016



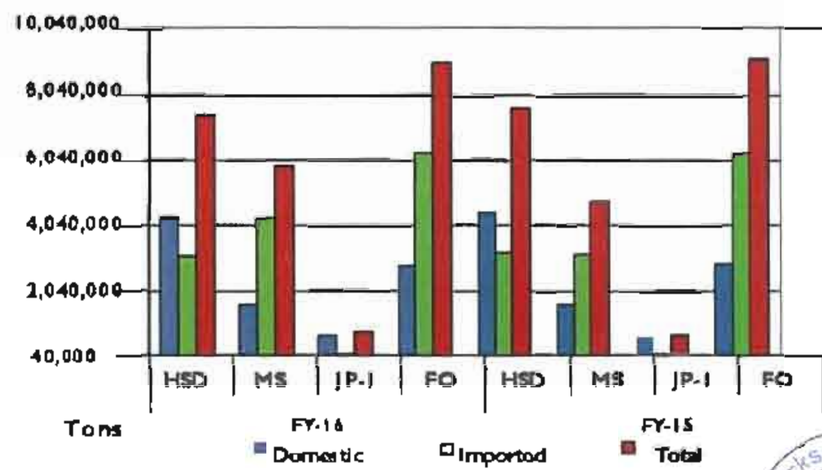
Imports and Local Production of Deficit Petroleum Products

— Imports contributed to 41 percent of HSD, 73 percent of MS, 14 percent of Jet fuels and 69 percent of FO of total POL demand in the country during FY 2016. Major development was witnessed in the import of MS as its share has increased from 66 percent last year to 73 percent at the present, mainly due to shutdown of ARL refinery for maintenance during the same period

Crude processing share - 2016



Domestic Production and Imports



KPMG

Market overview (8)

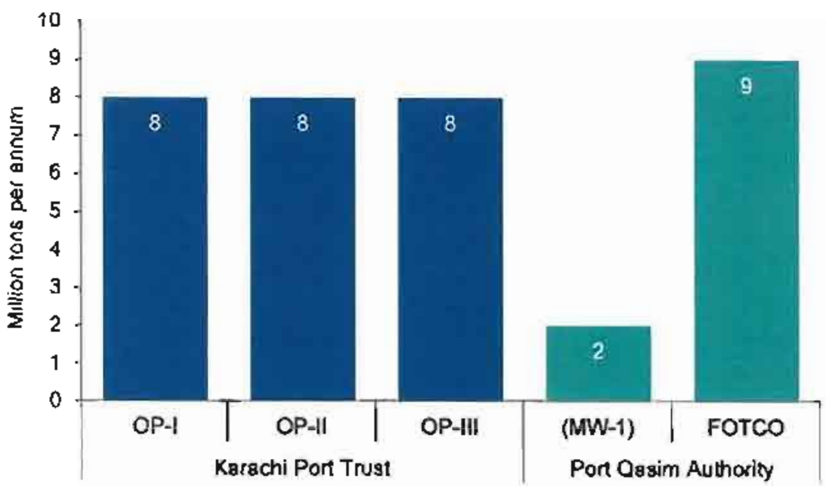
Oil supply infrastructure

- The pipelines, storages operated by refineries and OMCs, port terminals are the main facilities of the oil supply infrastructure. In addition to these main installations, depots and retail outlets of OMCs are also part of the country's oil infrastructure. Oil products are moved using a pool of around 10,000 tank lorries/bowsers and a number of railway tank wagons and pipelines connecting ports, refineries and OMCs installations.

Port handling facilities

- Karachi is the only seaport in the country with two port terminals, viz, Keamari (KPT) and Port Qasim (PQ), which have a combined operational capacity of 35 million TPA. Keamari is the larger of the two and is operating with three oil piers with a combined capacity of 24 million TPA. The pier-wise operational capacities of both ports have been analyzed as follows:

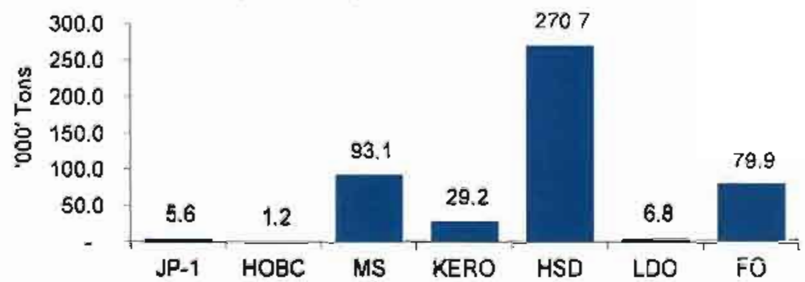
Available Port Infrastructure in Pakistan for Oil Imports



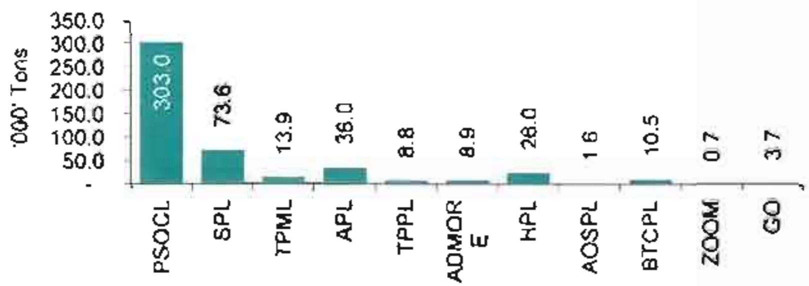
Refineries and OMC storage

- The OMCs and refineries receive, store, process, and distribute crude oil and petroleum products from their network of depots/installations. The main installations are at Karachi (Keamari, ZOT (Zulfiqarabad Oil Terminal) Korangi and Karachi Airport), Shikarpur, Mehmood Kot, Machike and Morgah in addition to PARCO's pipeline- related storage at Korangi, Qasba Gujrat (Muzaffar Garh), Faisalabad and Machike. The main contributor in OMCs' storage addition was by HPL which increased its MS storage capacity by more than 7500 tons during current year.

Product wise storage capacity



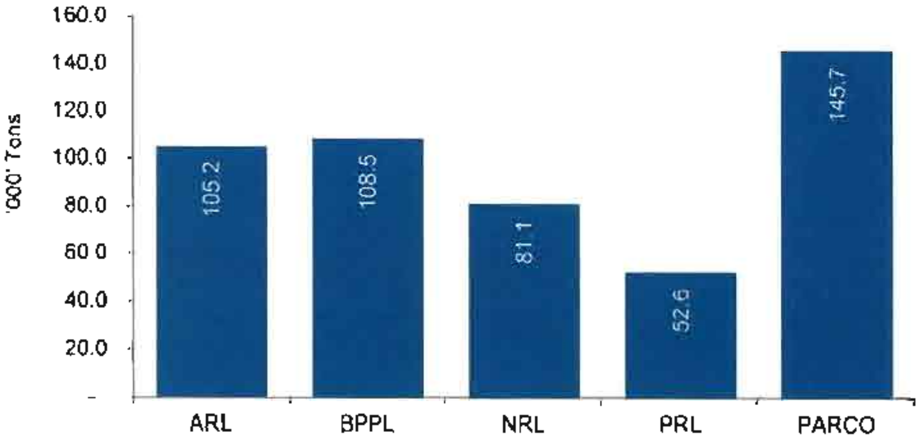
OMC wise storage capacity



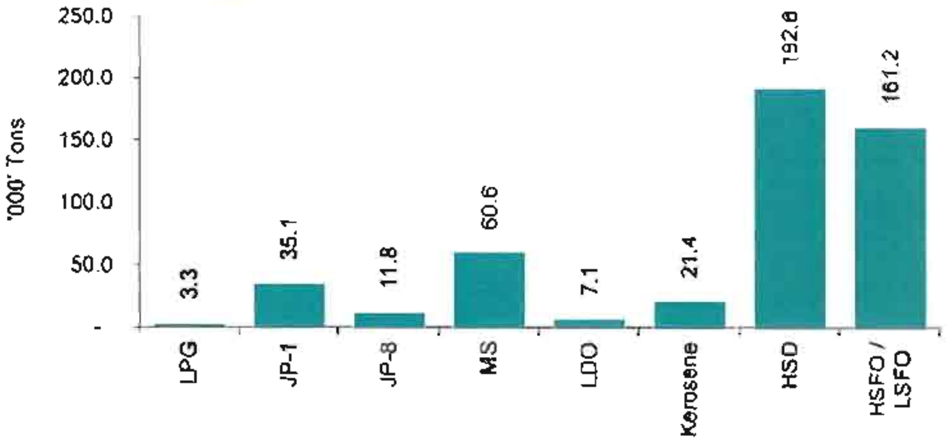
KPMG

Market overview (9)

Refinery wise storage capacity - refined products



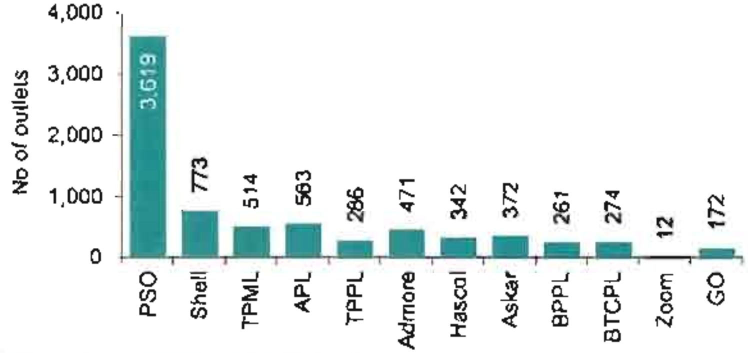
Product wise storage capacities at refineries



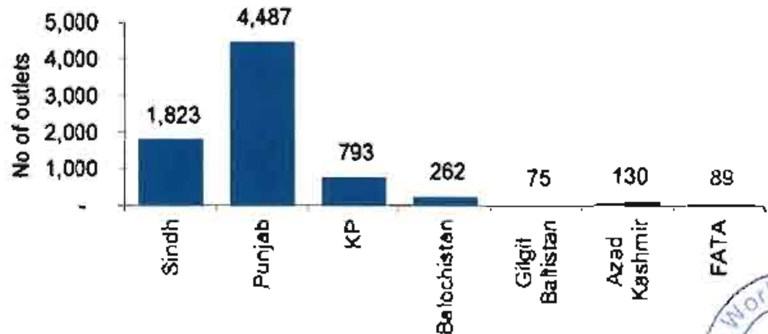
Oil supply infrastructure – contd..

- OMC retail outlets
  - PSO has the largest retail outlet network in the country with 47 percent share down from 50 percent last year, followed by Shell with 10 percent and TPML and APL with 7 percent share each. GOPL has added 85 new outlets during FY 2015-16, whereas HPL and PSO expanded its network by 62 and 60 outlets respectively.

OMC wise number of retail outlets



Region wise OMC retail outlets



KPMG

43

Frontier Works Organization BOT Dte

Market overview (10)

Oil supply infrastructure – contd..

- White oil pipeline infrastructure
- Mahmoodkot- Faisalabad–Machhike (MFM) pipeline
- PARCO commissioned 362-km Mahmoodkot- Faisalabad–Machhike (MFM) Pipeline, in 1997 to transport refined products like diesel and kerosene to Faisalabad and Machhike near Lahore. MFM has designed pumping capacity of approximately 3.7 million tons per year.
- Karachi to Mahmoodkot - White Oil Pipeline
- The US$ 480 million, White Oil Pipeline is the mega infrastructure project owned by Pak Arab Pipeline Company Limited (PAPCO). After conversion of PARCO's existing pipeline network for Crude Oil transportation, the White Oil Pipeline (WOP) is catering to transport diesel to the central regions of Pakistan; which account for almost 60% of the total Petroleum consumption in the country.
- For the implementation of the 786 km White Oil Pipeline Project (WOPP) from Karachi to Mahmoodkot, a joint venture company, Pak-Arab Pipeline Company Ltd. (PAPCO) was created.
- PARCO holds a 51% majority share in PAPCO while Shell, PSO and TOTAL PARCO Marketing Limited (formerly known as Chevron Pakistan Limited) hold 26%, 12% and 11% shares in equity respectively. The 26" dia White Oil Pipeline is designed for a capacity of 12 million tons per year, starting with 5 million tons in the initial years.
- Oil supply infrastructure – key challenges
- Oil contributes 36 per cent of Pakistan's total import bill, which is the highest of total imports made into Pakistan. Oil is imported in two forms, (1) Raw crude oil and (2) refined petroleum. Crude oil is imported by the refining sector whereas refined products are directly imported and marketed by the Oil Marketing Companies (OMC's).
- Current oil reserves available for exploration are not sufficient to cater the entire energy needs of the country hence deficit of crude oil requirement is met through imports by the indigenous refining sector, however the deficit still remains due to very high demand from the consumer market, which is overcome directly by the individual OMC's import of refined petroleum products.
- This is the most challenging and an exceptional obligation carried out by the OMC's as the entire pressure of the supply / demand deficit is handled by these companies which own significant infrastructure and trade lines with the GCC and far eastern countries.
- Not too far away and just a year back following fiercely dwindling international oil prices led to increased demand of Motor Gasoline in the country resulting in very low stock level especially in the major cities.
- There exists extraordinary insufficient storage facility along the coastal areas of Pakistan where the ships carrying bulk of imported petroleum product dock.
- Over the past 5 years, country's motor gasoline demand has increased by 240%which has put load on imports with minor increase in the local refinery production. This has also put enormous pressure on the existing Oil Piers at Keamari Port Trust.

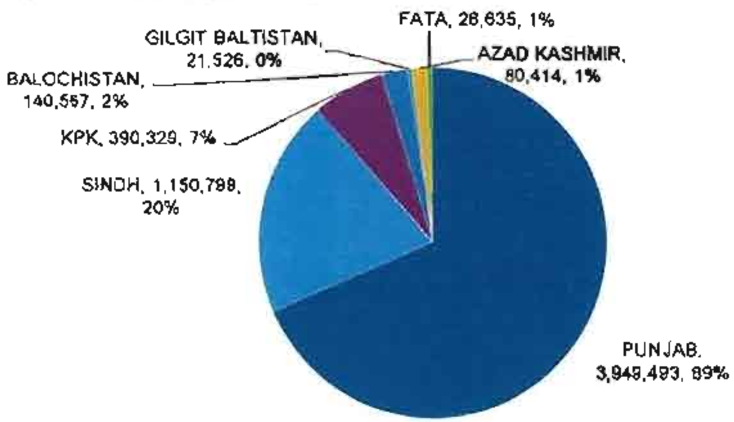
  The motor gasoline vessels calling at Keamari have to wait for their turn to berth and result in demurrages. Cognizant with this fact, the OMC's have yet again ensured sustainable imports in spite heavy demurrages for not being able to berth their motor gasoline vessels upon arrival.
- OMC's are not allowed to add cost of foreign exchange and ocean losses, similarly OMC's cannot also add the demurrage cost in the price buildup of imported products which erodes the bottom line of the balance sheet.

KPMG

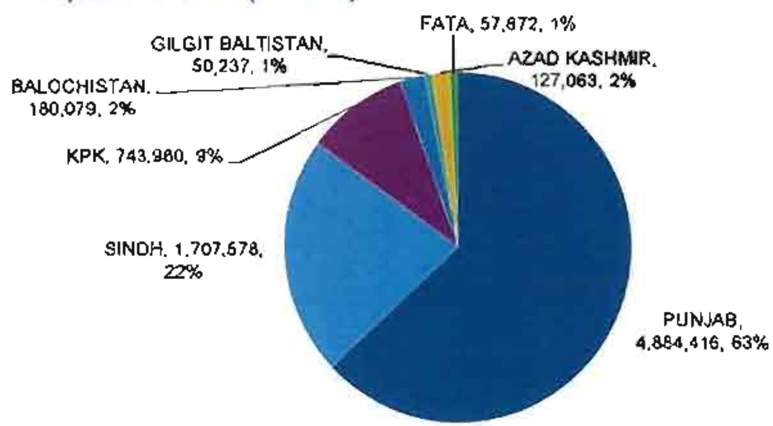
Market overview (11)

Geographic composition of refined products consumption

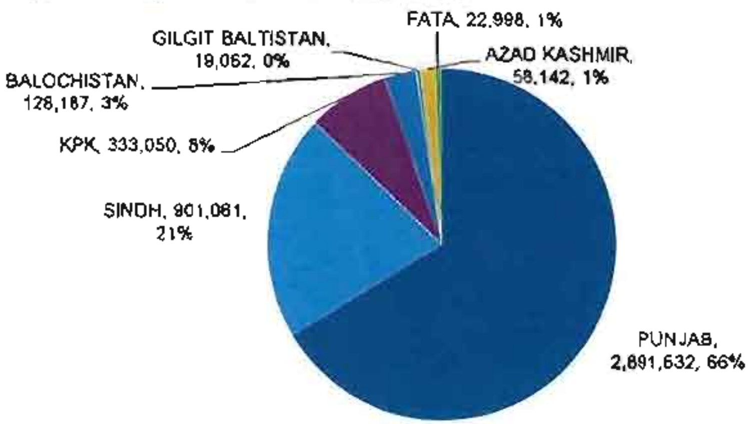
MS Consumption - 2015-16 (M. Tons)



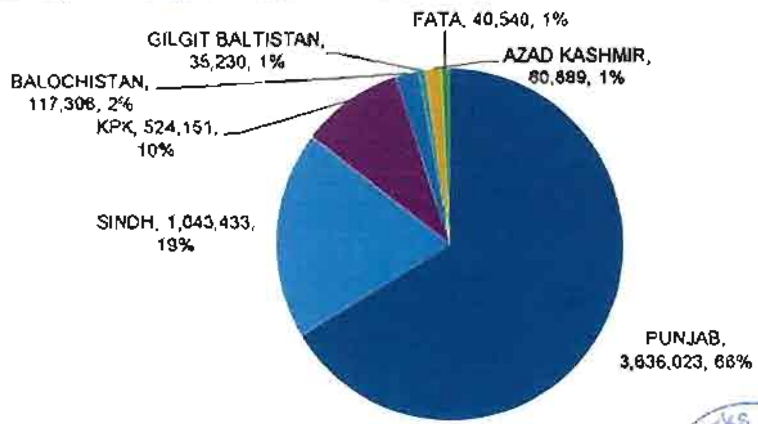
HSD Consumption - 2015-16 (M. Tons)



MS Consumption - July to Feb 2016-17 (M. Tons)



HSD Consumption - July to Feb 2016-17 (M. Tons)



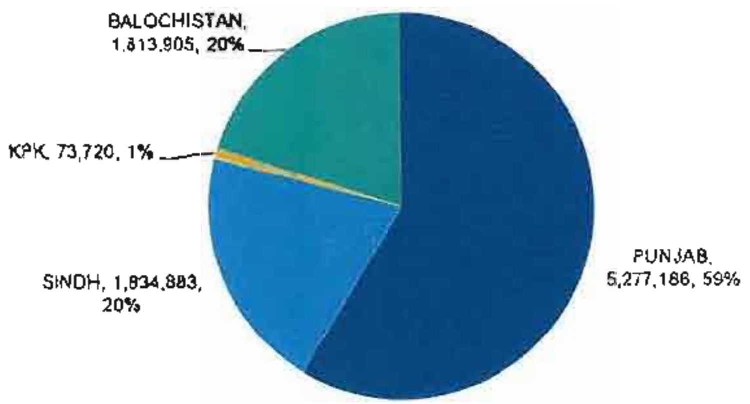
KPMG

Frontier Works Organization

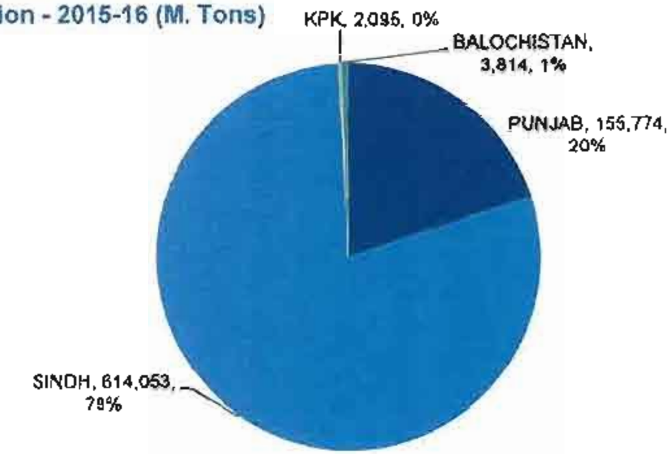
Market overview (12)

Geographic composition of refined products consumption

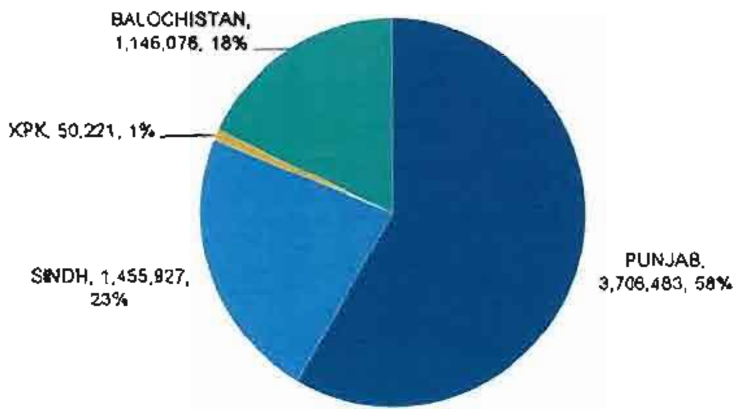
FO Consumption - 2015-16 (M. Tons)



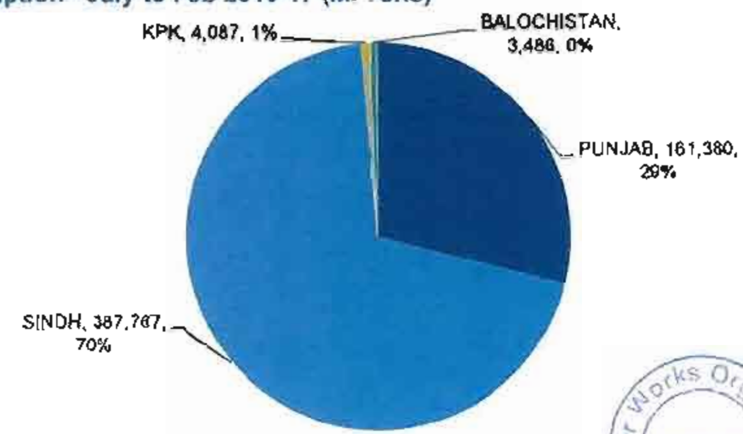
JP 1 Consumption - 2015-16 (M. Tons)



FO Consumption - July to Feb 2016-17 (M. Tons)



JP 1 Consumption - July to Feb 2016-17 (M. Tons)



KPMG

Frontier Works Organization BOT Dte

Market overview (13)

- Product pricing
- The pricing of the refineries products is carried out under the Import Parity Pricing Formula. Following are the salient features of the present pricing formula:
- In March 2013 the GoP announced a policy framework for upgrade and expansion of refineries. With effect from January 2016, subject to the completion of DHDS project, the current 7.5% deemed duty on HSD will be enhanced to 9%, which may remain applicable till the envisaged complete deregulation. It may be highlighted that the refineries had originally been allowed 10% deemed duty on HSD, which was subsequently reduced in 2008 to 7.5%.
- This incentive will support the refineries in upgrading their projects and producing EURO-II compliant products. The policy framework also requires refineries to deposit on half yearly basis (with final adjustment on annual basis), the amount of profit above 50% accumulated in the Special Reserve account/ ESCROW Account to be operated jointly with Finance Division and shall be available for utilization exclusively for upgrade of refineries. Such amounts shall be transferred to the ESCROW account on completion of certain formalities.
- Further, the refineries have been directed that till completion of the projects, offsetting of losses, if any for the year ended June 2013 or subsequent years, will not be allowed against the amount of profit above 50% accumulated in the Special Reserve account.
- Effective April 2013, the price differential between entitled local HSD ex-refinery price (Import parity price) and ex-refinery price based on actual PSO imports for the period shall be reimbursed by refineries except PARCO, through Inland Freight Equalization Margin (IFEM) mechanism after recovery from OMCs. Refineries are required to deposit the surplus differential arising due to higher PSO import price in IFEM pool to pass on benefit to consumer through IFEM mechanism being managed by OGRA.

KPMG

Market overview (14)

Regulatory environment

- The upstream activities in the oil and gas sector are administered and regulated through the Directorate General of Petroleum Concessions (DGPC) of the Policy Wing, Ministry of Petroleum and Natural Resources. Other regulatory bodies such as the Competition Commission of Pakistan and environmental agencies in specific set of circumstances can exercise jurisdiction in respect of transactions affecting the competition laws and environmental laws (as applicable).
- OGRA is a primary regulator for the midstream and downstream oil & gas industry and does not prima facie exercise regulatory control on the upstream sector. Be that as it may, in certain limited circumstances such as determination of wellhead prices, OGRA has exercised jurisdiction in the upstream sector.
- The basic law that regulates the upstream sector is the Regulation of Mines and Oil Fields and Mineral Development (Government Control) Act, 1948 (the 1948 Act). The main purpose of the 1948 Act was to provide the basis for creating a legal framework for mineral development and production, and empower the Central and Provincial Governments to make rules in respect of various matters concerning mineral resources.
- The majority of the Rules governing the upstream petroleum sector have been made pursuant to section 2 of the 1948 Act. Though the 1948 Act provided that the power to make rules and regulations in respect of the petroleum sector would vest in the Central Government, it did not address the question of ownership of mineral resources including petroleum.
- This lacuna was filled by Presidential Order 1961 which provided that all minerals and rights pertaining thereto shall stand acquired by and transferred to and shall vest in the Central Government, notwithstanding any law, custom, usage, agreement, decree or order to the contrary. It also provided that this acquisition of minerals by the Government shall be free from all encumbrances.
- Prior to 1986, exploration for oil and gas and their production was governed by the Pakistan Petroleum (Production) Rules, 1949 (the 1949 Rules). These Rules were made pursuant to section 2 of the Regulation of Mines and Oilfields and Mineral Development (Federal Control) Act, 1948. Leases pursuant to these rules are known as "Oil Mining Leases".
- Leases granted after 1986 are governed by the Pakistan Petroleum (Exploration and Production) Rules, 1986 (the 1986 Rules) also made pursuant to Section 2 of the Regulation of Mines and Oilfields and Mineral Development (Federal Control) Act, 1948. At times, leases formally executed after 1986 but relating to a pre-1986 discovery were executed as mining leases under the 1949 Rules. A lease granted under the 1986 Rules is known as "Development and Production Lease 2. The 1986 Rules were replaced on 2001 by the Pakistan Petroleum (Exploration and Production) Rules, 2001 for onshore areas and in 2003 by the Pakistan Petroleum (Exploration and Production) Offshore Rules, 2003 for offshore areas. The 2001 Rules were replaced by the Pakistan Petroleum (Exploration and Production) Rules, 2009 and very recently the Pakistan Onshore Petroleum (Exploration and Production) Rules, 2013.
- Pakistan's oil & gas industry first captured interest of investors when the Exploration and Production Policy of 1991 was introduced. Through subsequent improvements in the policies of 1993, 1994, and 1997 Pakistan was generally regarded as an attractive location for upstream investment.
- Pakistan overhauled the policy in 2001 and accordingly introduced corresponding Rules in 2001 for onshore areas and in 2003 for offshore areas as discussed above. New policies revising the tax, fiscal and commercial regimes were issued from time to time.
- The last policy was revised in 2012 which has made several useful revisions to the tax and pricing regime from the position contemplated in the previous policy.

Market overview (15)

Regulatory environment – contd..

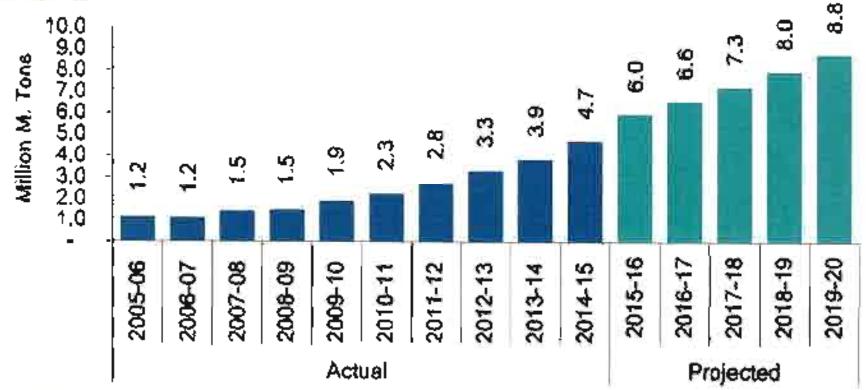
- A new Model PCA has also been issued incorporating changes in policy and reflecting changes in the Rules. It may be important to note that the regulatory regime provides option to the holder of the petroleum right to convert to a later policy and take advantage of the revised regime. Such conversion is subject to amendment of the underlying PCA (as approved by the Government) in order to make the same consistent with the new policy and the underlying Rules thereof. The requirements to exercise conversion option available under the policy framework are dealt with in the underlying policies and specific advice should be obtained prior to exercising the conversion option.
- Over the last decade, oil marketing and distribution has been semi-regulated with marketing margins set by the GoP while price setting at the forecourt retail level has moved back and forth from regulatory ambit. In 2000 the market for residual fuel oil and industrial products mainly used for power generation was completely de-regulated which was followed by GoP's reforms across key areas of the economy. While marketing margins remain regulated, OMCs in Pakistan focus on increasing core earnings by volumetric growth that eventually boosts their respective market share and profitability.
- In order to stimulate foreign investment, marketing margins for OMCs were revised from an initial 0.51%-2.17% to 3% for all regulated products. Margins were further enhanced to 3.5% in July 2002 and Pakistan's 2nd largest volume generating product HSD (accounts for 35% of total petroleum products consumption today) was de-regulated at the principal stage in view of the domestic production deficit.
- OMCs were allowed to import HSD and set the retail level price of the product with prices uniform across the country through a system known as IFEM evenly spreading the distribution and transport costs of the products across the country onto end retail prices.
- During 2002 to 2008, petroleum product pricing included ex-refinery prices based on import parity, with dealer and distributor margins and taxes taking prices to the ex-depot level. Prices were independently regulated by the OGRA.
- Post 2008, within the backdrop of firmly high oil prices, the GoP reinstated the reform process to further deregulate the sector. Marketing margins were changed from a percentage to an absolute basis in 2010 leading to a reduction in product distribution margins by 20%-25% across the regulated product range. In 2011, the GoP revised upwards margins on premium motor gasoline and HSD by 32% and 30%, respectively, to improve core profitability of downstream marketing within the backdrop of circular debt exposure and PKR depreciation.
- Imports of premium motor gasoline were deregulated at the principal stage i.e. allowing OMCs to set the ex-refinery and ex-depot price based on actual product imports excluding gallop tenders while the GoP continued to monitor HSD prices at the ex-refinery level for refiners.
- In 2012, the GoP for the first time deregulated HSD prices at the ex-refinery level bringing them in-line with actual OMC import prices as set by Pakistan State Oil Company Limited (state owned and is the largest oil marketing company in Pakistan). Currently, margins on HSD and MS are being considered for an upward revision by the GoP given inflationary pressures amid repeated requests by the industry.
- The pricing of the refineries products is carried out under the Import Parity Pricing Formula, where in March 2013 the Government announced Policy Framework for upgrade and expansion of refineries. Effective April 2013 the price differential between entitled local HSD ex-refinery price (Import parity price) and ex-refinery price based on actual PSO imports for the period shall be reimbursed by refineries except PARCO, through IFEM mechanism after recovery from oil marketing companies.

Market overview (16)

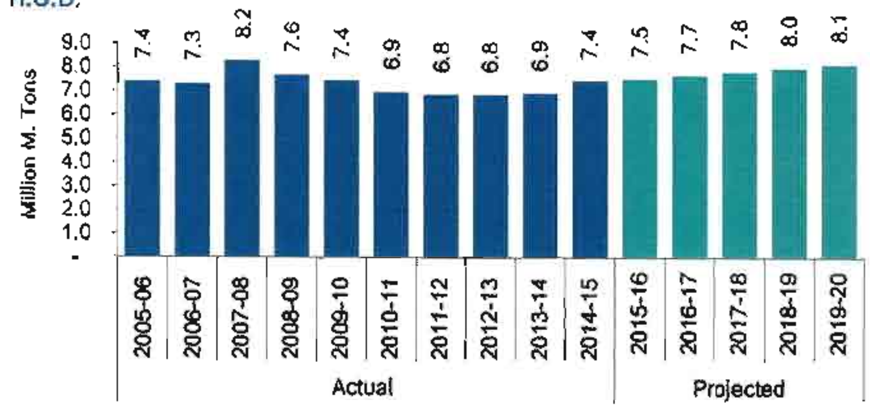
Consumption forecast – refined products

- Oil Companies Advisory Council (OCAC) publishes forecasts for refined products consumption in Pakistan. The product wise historic and projected numbers have been analyzed as follows:

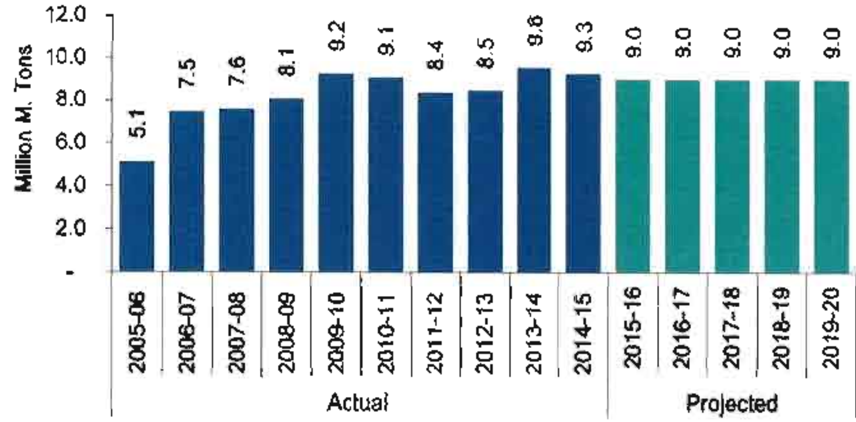
MOGAS



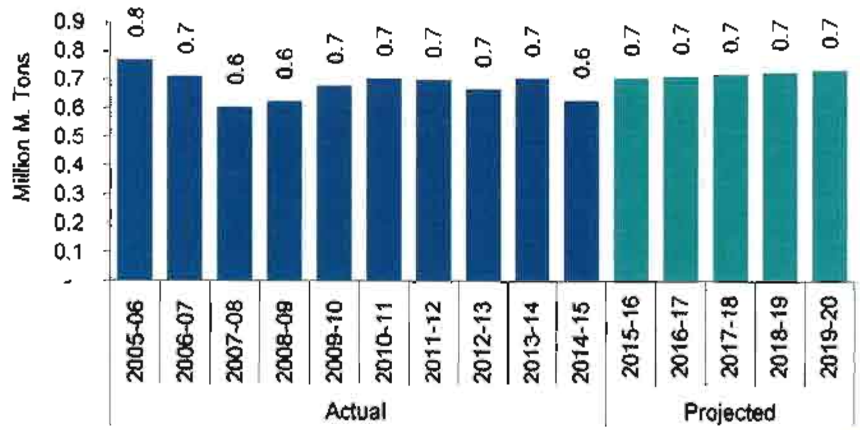
H.S.D.



F.O.



JP-1

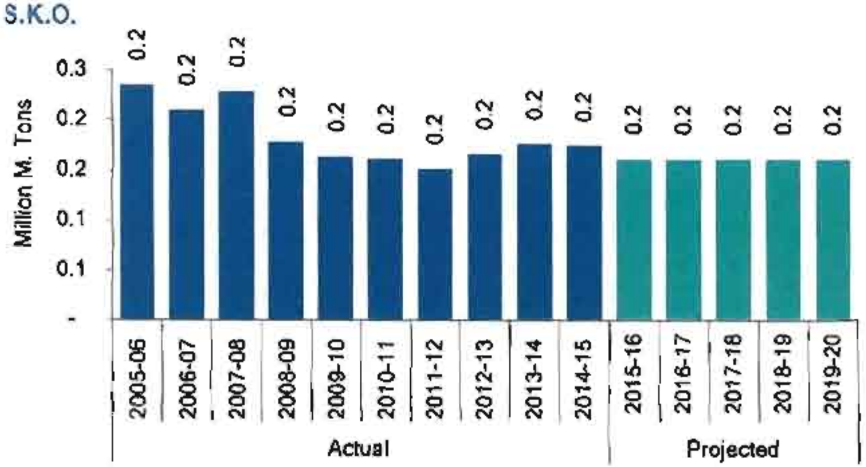


KPMG

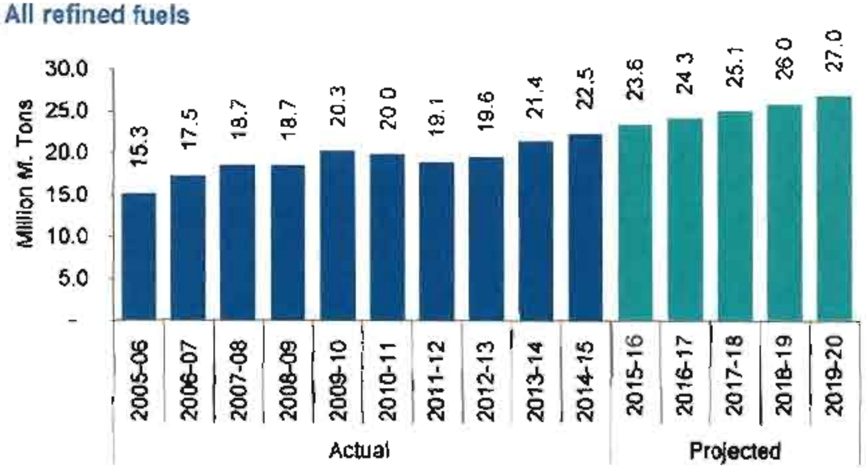
Market overview (17)

Consumption forecast – refined products – contd..

S.K.O.

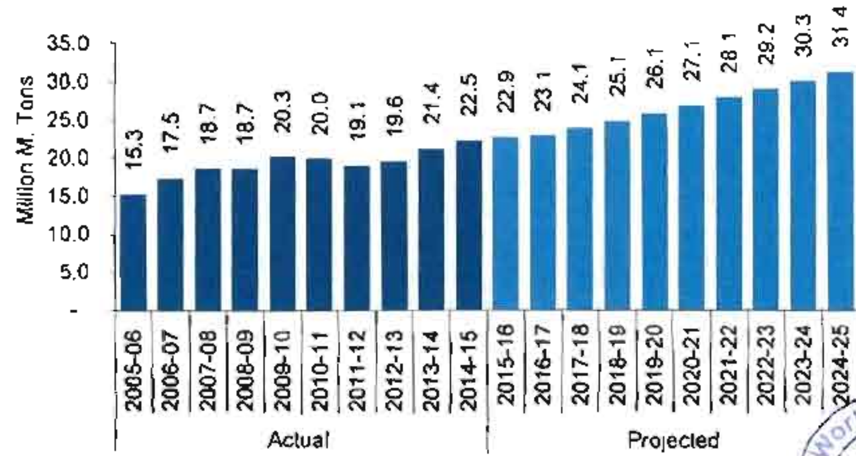


All refined fuels



- In addition to the OCAC forecasts, the Pakistan refined oil products forecasts of Business Monitor International (BMI) have also been analyzed.
- BMI view is that Pakistan's refined fuel consumption would increase by 32.2% over the next decade, largely supported by strong growth in its vehicles fleet and growing fuel demand in transportation sector. The residual fuel oil is likely to be an exception, where the consumption of residual fuel oil is expected to decline by 17.6% in next 10 years primarily because of declining share of oil-fired electricity generation in total power mix. Oil fired power generation would make-up around 10% of the total power mix when compared to 22.6% for the year 2016.
- While considering the BMI yearly forecasts, the refined products consumption projections have been analyzed as follows:

All refined fuels consumption forecast



KPMG

Analysis of key assumptions & scenario analysis

Analysis of key assumptions & scenario analysis (1)

- Under this section, the assumptions applied by FWO management for the purposes of project feasibility have been analyzed. Because of the unique nature of project, the market benchmarks are not available under Pakistan market context with reference to almost all of the key assumption. Accordingly, the impact on project viability has also been analyzed by undertaking variation in key assumptions.
- There are certain key assumption for which the current financial model is not capable to demonstrate the scenario results, which have been separately indicated.
- The scenarios analyzed under this section are independent i.e. the impact of preceding scenario is not carried to the next scenario.

Project components – oil jetty and white oil pipeline

- Based on the feasibility study, there are two project components, one being the development of jetty and second being the white oil pipeline infrastructure. These two project components can be regarded as distinct in terms of operating model and structure and project viability assessment can be performed separately, however FWO management has represented that the project is only viable if it's taken as an integrated project and not in segments in terms of investment and as per the need of the country which has been agreed by the Ministry of Petroleum, hence the project has not been analyzed as two separate components

Project structure - right of ways

- As per the feasibility study, FWO would require right of way for laying of white oil pipeline infrastructure, which is currently planned along with the motorways. FWO was requested to share the right of way study and cost estimate for securing right of way.
- In response to the request, the management of FWO clarified that the details of the right of way study are confidential and cannot be shared, but as mentioned in the feasibility study it will be along the motorways which are already with FWO.

Project structure – storage facilities

- We understand that additional white oil storage facilities would be required to be developed by other stakeholder as ancillary to this FWO project. The project implementation and successful operations would be dependent on the availability of such facilities.

  We were given to understand that FWO is in discussions with other stakeholders (primarily OMCs) for development of storage facilities and we requested FWO management to share the correspondence and status of discussions with other stakeholders as to the development of required storage facilities.

  The management of FWO represented that the correspondence with other stakeholders is confidential hence cannot be shared without prior approval of the stakeholders, The current situation of storage capacity in Pakistan has been explained in the feasibility and the importance of enhanced storage capacity in the country has been evident from the petroleum shortage in the country in past years and the failure of several OMC's to meet the fuel requirement of OGRA to maintain 21 days fuel stock.

Project capital cost estimates

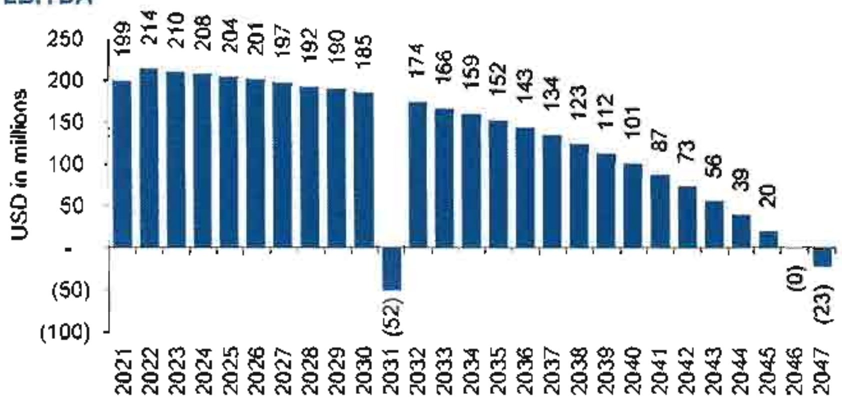
- The development of jetty and setting up white oil pipeline infrastructure is a specialized engineering/ construction segment. We requested FWO management to share the technical feasibility study for the said two project components.
- FWO management clarified that the technical side of the project has been consulted with in house and external professionals of the industry who have been related the industry for the past 35 years and have confirmed the technical and costs aspects of the project but the documentation is confidential hence cannot be shared.
- FWO management also clarified that they have solicited independent confirmation to the project cost estimates, which are confidential documents.

Analysis of key assumptions & scenario analysis (2)

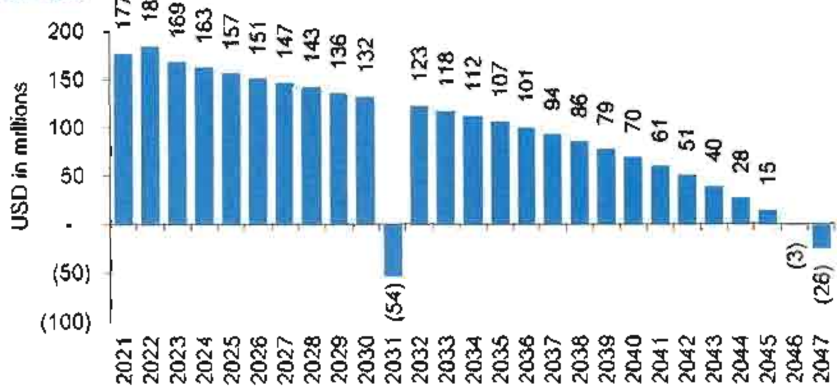
- Project cost estimates - contd.,
- The project cost estimates, regardless of being thoroughly worked and conferment independently, remain exposed to certain uncontrollable risk like the local currency devaluation and other factors not planned at project conception. Accordingly, the feasibility results have been analyzed by increasing the project EPC costs by 20% in order to assess the sensitivity of variation in project costs on project viability. The scenario results have been summarized as follows:

	Base case	Scenario
Project IRR	16.81%	14.09%
Equity IRR	34.55%	30.05%
Equity NPV	461	380
Payback Period (Years)	3.99	4.49
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

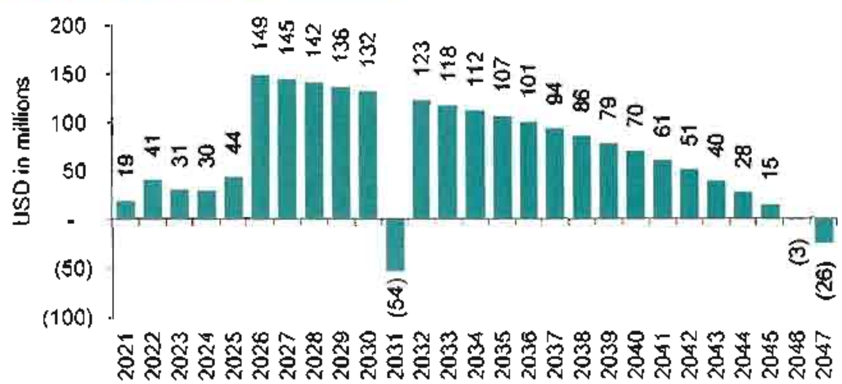
EBITDA



CFADS



Cash flow available for dividends



- The results of this scenario analysis indicate that the project returns are less sensitive to increase in project capital cost.

KPMG

Analysis of key assumptions & scenario analysis (3)

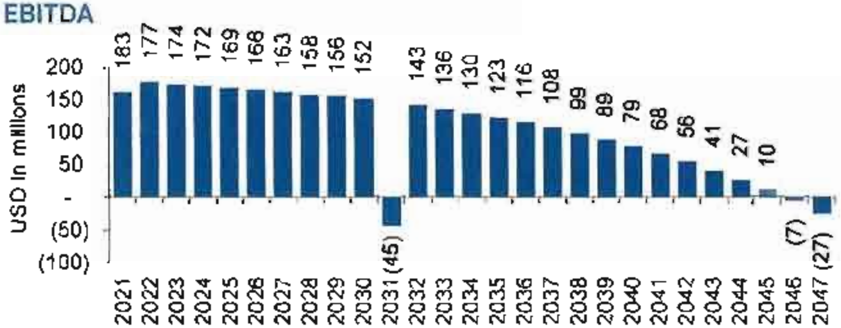
- **Pipeline usage tariff**

  We understand that the tariff or usage charge for the FWO white oil pipeline component would be determined by OGRA. The quantum of tariff remains the pertinent variable from project viability perspective, which remain uncertain at this point in time. FWO management is of the view that the likely range of tariff would be the same as taken in the financial model, while FWO management informed that correspondence with OGRA is confidential hence cannot be shared until the tariff has been officially approved by the concerned department.

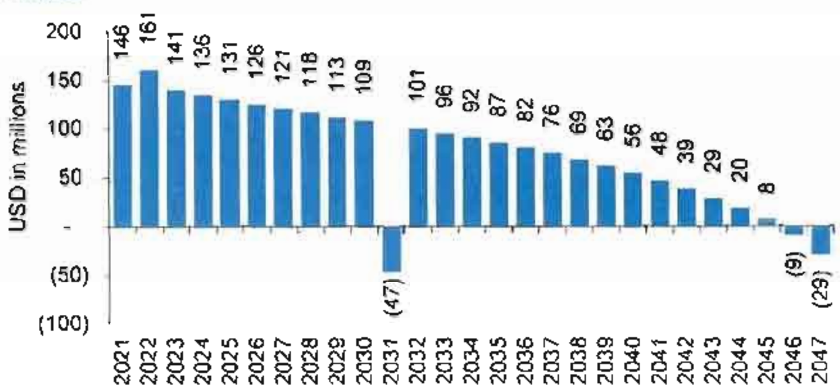
- Accordingly, the feasibility results have been analyzed by decreasing the tariff by 20% in order to assess the sensitivity of variation in tariff on project viability. The scenario results have been summarized as follows:

	Base case	Scenario
Project IRR	16.81%	13.79%
Equity IRR	34.55%	28.60%
Equity NPV	461	289
Payback Period (Years)	3.99	4.49
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

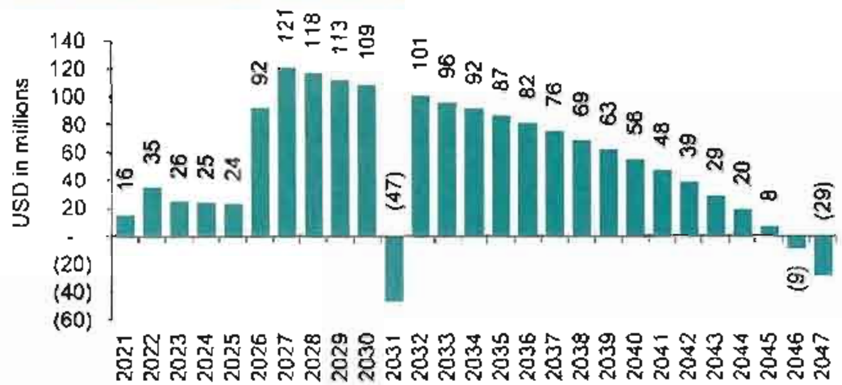
EBITDA



CFADS



Cash flow available for dividends



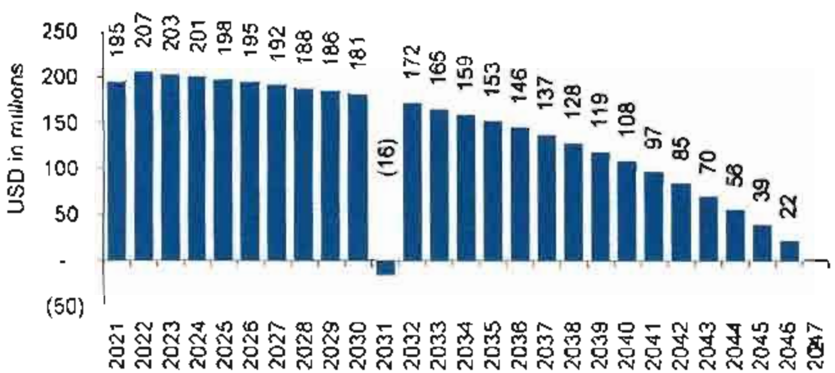
- The results of this scenario analysis indicate that the project returns are sensitive to decrease in tariff, where at half the level of tariff assumed by FWO, the project starts tilting towards an unviable proposition.

Analysis of key assumptions & scenario analysis (4)

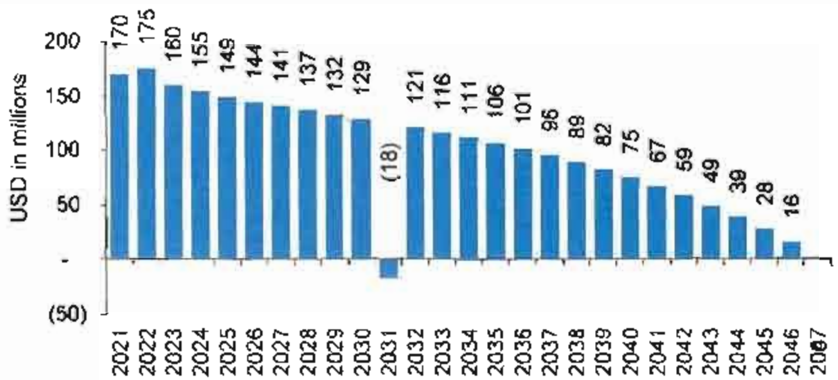
- Jetty oil handling charge
- For the purpose of this feasibility study, FWO management has estimated an oil handling charge of USD 6 per MT.
- We have analyzed feasibility results by decreasing the oil handling charge by 20% in order to assess the sensitivity of variation in oil handling charge on project viability. The scenario results have been summarized as follows:

	Base case	Scenario
Project IRR	16.81%	16.22%
Equity IRR	34.55%	33.31%
Equity NPV	461	419
Payback Period (Years)	3.99	3.99
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

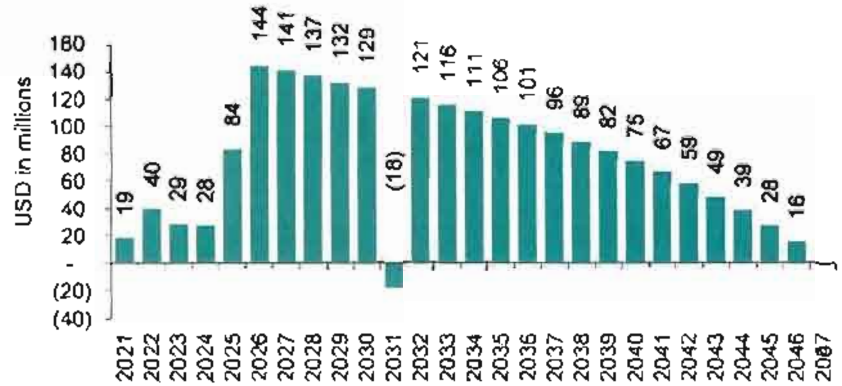
EBITDA



CFADS



Cash flow available for dividends



The results of this scenario analysis indicate that the project returns are marginally sensitive to decrease in oil handling charge, where even at 20% of the assumed charge level, the project returns indicative acceptable results.

KPMG

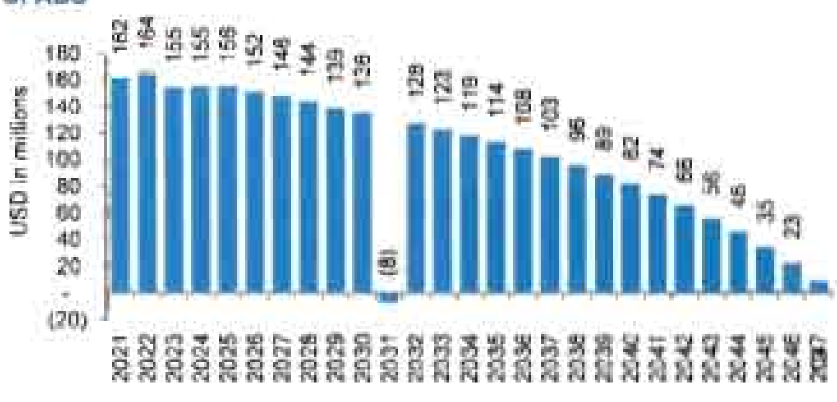
Analysis of key assumptions & scenario analysis (5)

Throughput at Oil Jetty

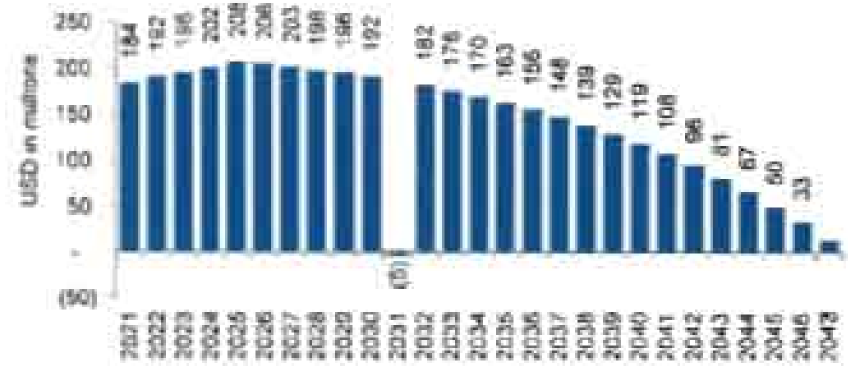
- For the purpose of this feasibility study, FWO management has estimated throughput based on demand estimates, while the 100% capacity utilization is achieved in the second year.
- We have analyzed feasibility results by decreasing the demand throughput by 50% in order to assess the sensitivity of variation in throughput on project viability. The scenario results have been summarized as follows.

	Base case	Scenario
Project IRR	16.81%	16.40%
Equity IRR	34.55%	33.42%
Equity NPV	461	442
Payback Period (Years)	3.99	3.99
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	5.50

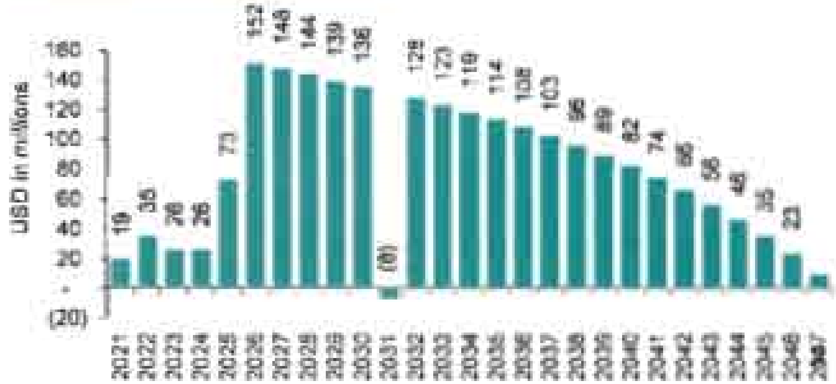
CFADS



EBITDA



Cash flow available for dividends



The results of this scenario analysis indicate that the project returns are marginally sensitive to decrease in demand throughput at oil jetty, where even at 50% of the assumed throughput, the indicated project returns are marginally affected.

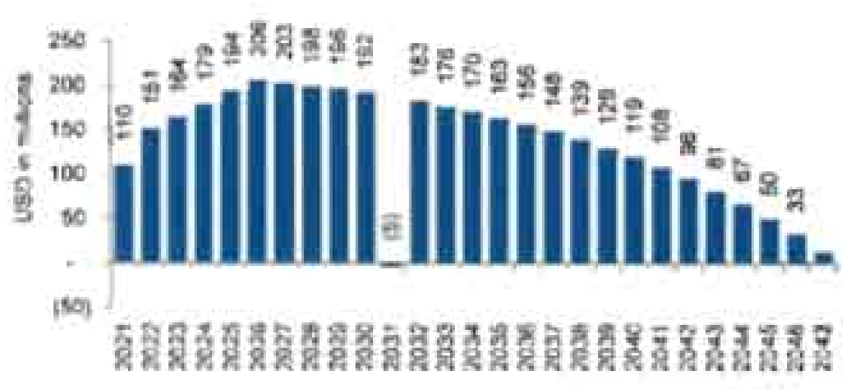
KPMG

Analysis of key assumptions & scenario analysis (6)

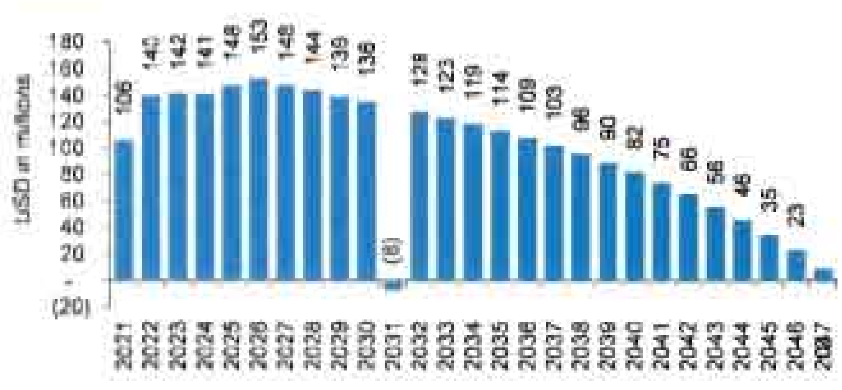
- Pipeline throughput
- For the purpose of this feasibility study, FWO management has estimated pipeline throughput based on demand estimates, while the 100% capacity utilization is achieved in the forth year (1st year with jetty operations).
- We have analyzed feasibility results by decreasing the demand throughput by 50% in order to assess the sensitivity of variation in throughput on project viability. The scenario results have been summarized as follows:

	Base case	Scenario
Project IRR	16.81%	15.20%
Equity IRR	34.55%	30.44%
Equity NPV	461	392
Payback Period (Years)	3.99	4.49
Pipeline Capacity Reached (Years After COD)	0.50	5.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

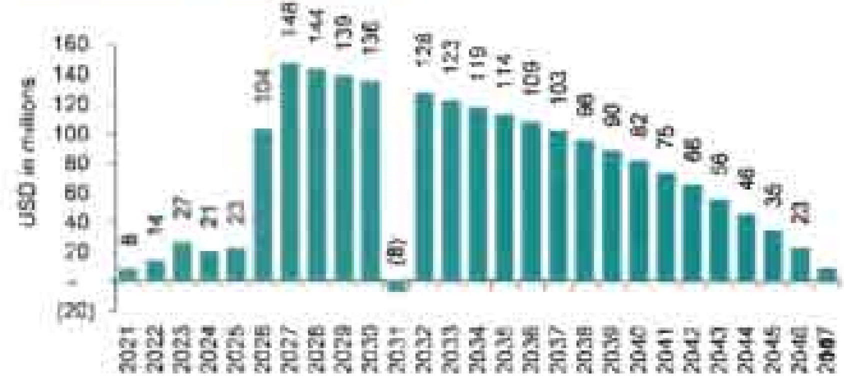
EBITDA



CFADS



Cash flow available for dividends



The results of this scenario analysis indicate that the project returns are less sensitive to decrease in demand throughput at pipeline, where even at 50% of the assumed throughput level, the calculated project returns are indicating a viability scenario.

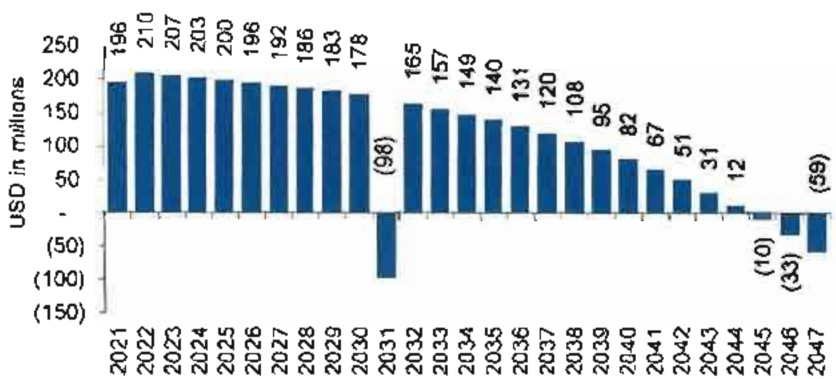
KPMG

Analysis of key assumptions & scenario analysis (7)

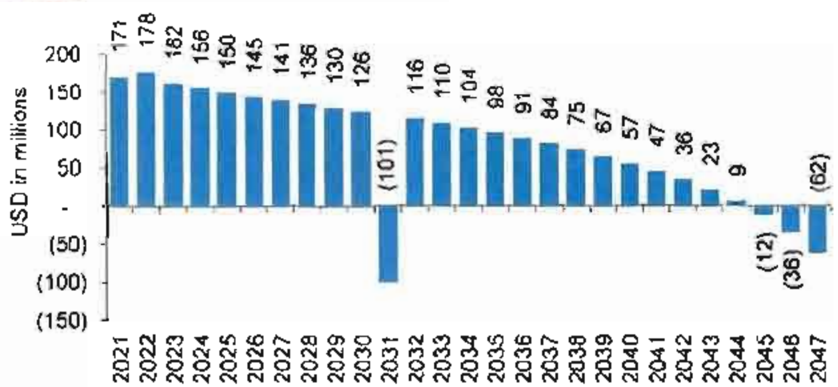
- Operating costs assumptions
- For the purpose of this feasibility study, FWO management has estimated operating costs based on various technical teams inputs.
- We have analyzed feasibility results by increase the operating costs by 40% in order to assess the sensitivity of variation in operating costs on project viability. The scenario results have been summarized as follows:

	Base case	Scenario
Project IRR	16.81%	15.65%
Equity IRR	34.55%	32.96%
Equity NPV	461	366
Payback Period (Years)	3.99	3.99
Pipeline Capacity Reached (Years After COD)	0.50	0.50
Jetty Capacity Reached (Years After COD)	1.50	1.50

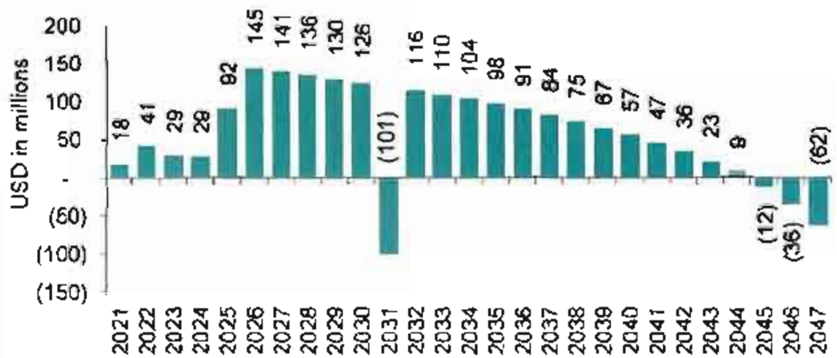
EBITDA



CFADS



Cash flow available for dividends



The results of this scenario analysis indicate that the project returns are less sensitive to increase in operating costs, where even at 40% increase in operating costs, the project returns are indicating a viability scenario.

Analysis of key assumptions & scenario analysis (8)

- Enhancements at other WOP networks
- As per the feasibility study, the project envisages eliminate the road transport of MOGAS from Karachi to Up-Country. We understand that currently the whole of MOGAS transportation is undertaken through tankers and the existing white oil pipeline infrastructure is used for other refined fuels primarily diesel. For enabling transportation to MOGAS on white oil pipeline, the existing white oil pipeline network would need up gradation.
- We further understand that FWO has initiated negotiations with Pak-Arab Pipeline Company PAPCO for optimum utilization of white oil infrastructure.
- The viability of FWO white oil pipeline project remain dependent on up gradation of PAPCO existing white oil pipeline infrastructure.
- FWO management has clarified that PAPCO had given tender advertisement for up-gradation of its pipeline last year, the work has already been awarded to a company and as the mutual understanding the PAPCO pipeline will be ready for utilization by the time FWO achieves COD for its project.
- Development of oil jetty
- As per the feasibility study, FOTCO has the first right of refusal for development of any Oil related infrastructure at Port Qasim under article 3.13.3 of the Implementation Agreement dated 8th December, 1992 between FOTCO and PQA.
- FWO management has clarified that the response of FOTCO is confidential hence cannot be shared.
- Working capital assumptions
- As per the feasibility study, working capital assumptions have not been separately considered.
- FWO management has clarified that the OPEX cost mentioned in the financial model are inclusive of the working capital assumptions.

- Foreign exchange risk
- The pipeline usage tariff and oil handling tariff at jetty has been assumed as USD pegged while high escalation assumptions have been applied. We requested for a clarification on the FWO project model with reference to PKR devaluation risks, which have not separately been identified. The financial model is not capable of performing sensitivities on PKR devaluation.

Alliance with a leading OMC

The feasibility study states that after several meetings & negotiations with one of the leading Oil Marketing Company, a consensus was reached, according to which the OMC will charge 0.95 USD/MT for Storage facilities at Port Qasim.

FWO management has clarified that the documentation supporting the consensus on storage charge with one of the leading OMC are confidential documents and cannot be shared.

Arrangement with Santex Energo Export

- The feasibility states that Santex Energo Export a European based company having a consortium of world renowned companies in the field of petroleum, refinery, pipelines and other petroleum projects with or without financing, have shown intent to provide complete package of financing the subject project, while the financial model has been made on the basis of financial offer received by FWO and the financial terms provided by Santex Group.

FWO management has clarified that FWO has solicited an independent confirmation to the project cost estimates, which are confidential documents and cannot be shared at this stage.

KPMG

Frontier Works Organization BOT Dte

KPMG

Risk analysis

Risk analysis (1)

- Risk associated with the Project may be classified as broadly.
  - Risk during Construction
  - Risk during Operation
- The type and causes of risk in each class are different. Risks during construction are time susceptible and the probability of occurrence of different risk are time dependent, more is the duration of project higher are the probabilities. These are generally related to execution of work processes, material availability, manpower, finances (budget), time frame, accidental, legal and environmental.
- However, in operation, risks are slightly different, in which emphasis is given to avoid those factor with hurdle safe and smooth operation/functioning of the plant.
- More precisely, risk during construction and operation can be divided into following categories

Political risk

- The effect of country's policies on the project directly impact on project success or failure. During the policy making process, technical factors are usually ignored and policies may be set in a way that operation of a project may not be economical or trade offing.
- This factor is also important in unstable governments, where there is more risk of change of economic, petroleum or labor policies, which are directly related to the projects. Delays can occur due to laborious and detailed procedure for approval from public safety regulation department, environmental regulation agencies and oil and gas regulatory bodies.
- Public health, safety and environmental concern are more important in the western countries as compare to developing countries like Pakistan.
- Policy and political risks are more concerned in international project risks, such as cross border oil & gas pipeline projects.

Socioeconomic risk

- Socioeconomic conditions further reinforce the climate of uncertainty with high inflation and interest rates. The deregulation of financial institutions has also generated unanticipated problems related to the financing of construction

Technical risk

- The risks related to technological problems are familiar to the design/construction professions that have some degree of control over this category. However, because of rapid advances in new technologies that present new problems to designers and constructors, technological risk has become greater in many instances. Certain design assumptions which have served the professions well in the past may become obsolete in present time. Site conditions, particularly subsurface conditions which always present some degree of uncertainty, can create an even greater degree of uncertainty during construction.

Investment risk

- Oil pipelines and port jetties are mega projects. A substantial funding is required for their completion and commercial operation. Investment has been always a prime risk in construction projects due to multiparty involvement.

Operational risks

- The new port jetty and white oil pipeline project operations would remain dependent on the demand scenario i.e. a controllable risk that growth in demand of refined products is substantially lower than the projections undertaken at the time of project conception.
- With increase in international price of crude and refined products, the demand in the country may follow slump.

Risk analysis (2)

Project specific risks

- Project marketability
- For the white oil pipeline infrastructure, the market side of feasibility study is primarily based on Oil Companies Advisory Council (OCAC) forecast. A thorough and independent market research has not been performed to identify the detail dynamics of demand drivers for the FWO project targeted geographical areas, the availability of storage and new location wise requirements, the OMCs capacity and viability assessment for investment in additional storage facilities and other related infrastructure requirements for FWO white oil pipeline project (infrastructure requirements to include facilities to be built by other stakeholder and not part of the FWO project). In the absence of a through project market research, the project marketability remains vulnerable to unknown risks.
- Availability of storage facilities
- Under the context of FWO white oil pipeline project, additional refined products storage facilities would be required to be developed by other stakeholder as ancillary to this FWO project. The project implementation and successful operations would be dependent on the availability of such facilities. Unless there are arrangements in place for the development of required storage facilities, the project development remains exposed to risk related to availability of storage facilities.
- Tariff or usage charge for the white oil pipeline project
- The tariff or usage charge for the FWO white oil pipeline component would be determined by Oil & Gas Regulatory Authority. The quantum of tariff remains the most pertinent variable from project viability perspective, which remain uncertain at this point in time.
- FWO management have had a number of discussion sessions with OGRA on the subject, while the project development works cannot be commenced unless there is a confirmation on tariff levels.
- Pipeline infrastructure seamless connectivity
- As per the feasibility study, the project envisages to eliminate the road transport of MOGAS from Karachi to Up-Country. Currently the whole of MOGAS transportation is undertaken through tankers and the existing white oil pipeline infrastructure is used for other refined fuels primarily diesel. For enabling transportation to MOGAS on white oil pipeline, the existing white oil pipeline network would need up gradation.
- FWO has initiated negotiations with Pak-Arab Pipeline Company PAPCO for optimum utilization of white oil infrastructure. The viability of FWO white oil pipeline project remain dependent on up gradation of PAPCO existing white oil pipeline infrastructure.
- Right of way
- FWO would require right of way for laying of white oil pipeline infrastructure, which is currently planned along with the motorways. The time required for securing complete right of was and associated costs remain a key risk for FWO project.
- CPEC related traffic and corresponding refined product requirements
- For the purposes of identifying CPEC related fuel requirements, traffic of 25,000 truck per day has been estimated by FWO management. The actual traffic considerably lower than the expected level would remain one of the key risks for the project
- Jetty infrastructure at the Port Qasim
- FOTCO has the first right of refusal for development of any Oil related infrastructure at Port Qasim under article 3.13.3 of the Implementation Agreement dated 8th December, 1992 between FOTCO and PQA. The arrangement with FOTCO would remain a key factor for commencement of development works of the new jetty.

Frontier Works Organization BOT Dte

KPMG

Summary of financial forecast

Summary of financial forecast (1)

Projected balance sheet

USD in millions	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Current Assets														
Cash	-	-	0.0	26.9	58.2	88.2	117.5	224.6	376.0	524.1	668.3	807.6	943.4	935.7
DSRA Balance	-	-	70.1	72.6	70.1	67.9	65.6	-	-	-	-	-	-	-
MRA Balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fixed Assets														
Net Facility	214.5	357.1	499.7	450.9	407.0	367.3	331.5	299.2	270.0	243.7	219.9	198.5	179.1	161.7
IDC Facility	8.4	25.3	51.5	46.5	42.0	37.9	34.2	30.8	27.8	25.1	22.7	20.5	18.5	16.7
Unamortized Fees	27.1	45.8	66.4	58.1	49.8	41.5	33.2	24.9	16.6	8.3	(0.0)	(0.0)	(0.0)	(0.0)
Total	250.0	428.2	617.5	555.5	498.7	446.6	398.8	354.9	314.4	277.1	242.6	218.9	197.6	178.3
Total Assets	250.0	428.2	687.7	655.0	627.0	602.7	581.9	579.5	690.4	801.2	910.9	1,026.5	1,141.0	1,114.1
Current Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current Portion	-	-	53.0	58.8	59.7	61.0	62.3	-	-	-	-	-	-	-
Long Term Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Debt	212.5	364.0	531.6	412.0	292.9	171.5	47.4	-	-	-	-	-	-	-
Total Liabilities	212.5	364.0	584.5	470.8	352.6	232.5	109.7	-	-	-	-	-	-	-
Equity														
Equity Issues	37.5	64.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2
Retained Earnings	-	-	-	81.0	171.2	267.1	369.0	476.4	587.3	698.0	807.7	923.4	1,037.8	1,010.9
Total	37.5	64.2	103.2	184.2	274.3	370.2	472.1	579.5	690.4	801.2	910.9	1,026.5	1,141.0	1,114.1
Total Equity & Liabilities	250.0	428.2	687.7	655.0	627.0	602.7	581.9	579.5	690.4	801.2	910.9	1,026.5	1,141.0	1,114.1

KPMG

Frontier Works Organization BOT Pte

Summary of financial forecast (2)

Projected balance sheet – contd..

USD in millions	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Current Assets															
Cash	1,186.8	1,305.4	1,419.0	1,527.5	1,630.2	1,726.3	1,815.7	1,898.1	1,972.5	2,038.7	2,094.8	2,141.1	2,176.2	2,199.5	2,209.0
DSRA Balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MRA Balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fixed Assets															
Net Facility	131.7	118.8	107.2	96.8	87.4	78.8	71.1	64.2	58.0	52.3	47.2	42.6	38.4	34.7	31.3
IOC Facility	13.6	12.3	11.1	10.0	9.0	8.1	7.3	6.6	6.0	5.4	4.9	4.4	4.0	3.6	3.2
Unamortized Fees	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Total	145.2	131.1	118.3	106.8	96.4	87.0	78.5	70.8	63.9	57.7	52.1	47.0	42.4	38.3	34.5
Total Assets	1,332.0	1,436.4	1,537.3	1,634.2	1,726.5	1,813.3	1,894.2	1,968.9	2,036.5	2,096.4	2,146.9	2,188.1	2,218.6	2,237.8	2,243.6
Current Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current Portion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long Term Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity															
Equity Issues	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2	103.2
Retained Earnings	1,228.9	1,333.3	1,434.1	1,531.1	1,623.4	1,710.1	1,791.0	1,865.8	1,933.3	1,993.2	2,043.7	2,084.9	2,115.4	2,134.6	2,140.4
Total	1,332.0	1,436.4	1,537.3	1,634.2	1,726.5	1,813.3	1,894.2	1,968.9	2,036.5	2,096.4	2,146.9	2,188.1	2,218.6	2,237.8	2,243.6
Total Equity & Liabilities	1,332.0	1,436.4	1,537.3	1,634.2	1,726.5	1,813.3	1,894.2	1,968.9	2,036.5	2,096.4	2,146.9	2,188.1	2,218.6	2,237.8	2,243.6

KPMG

Frontier Works Organization BOT Dte

Summary of financial forecast (3)

Projected income statement

USD in millions	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Revenue	238.2	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1
Less: Direct Operating Costs	14.9	16.4	18.0	19.8	21.8	24.0	26.4	29.0	31.9	35.1	38.6	42.5	46.7
Gross Profit	**223.3**	**238.7**	**237.1**	**235.3**	**233.3**	**231.1**	**228.7**	**226.1**	**223.2**	**220.0**	**216.5**	**212.6**	**208.4**
Less: OPEX													
Maintenance Costs	0.7	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.5
Major Maintenance Costs	-	-	-	-	-	-	-	-	-	-	192.5	-	-
Lease Expense	6.9	7.4	7.9	8.4	9.0	9.7	10.3	11.1	11.8	12.7	13.6	14.5	15.5
Insurance	2.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Funding Costs	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-
Hospitality charges	2.0	2.0	2.3	2.3	2.5	2.5	2.7	2.7	3.0	3.0	3.3	3.3	3.6
PQA charges	6.8	6.8	7.5	7.5	7.5	7.5	7.5	8.4	8.4	8.4	8.4	8.4	9.3
EBITDA	**202.6**	**217.3**	**214.1**	**211.7**	**208.9**	**206.0**	**202.6**	**198.3**	**196.3**	**192.2**	**(5.1)**	**182.5**	**175.9**
Less: Depreciation	48.7	44.0	39.7	35.8	32.3	29.2	26.3	23.8	21.4	19.4	17.5	15.8	14.2
Less: Depreciation on IDC	5.0	4.5	4.1	3.7	3.3	3.0	2.7	2.4	2.2	2.0	1.8	1.6	1.5
Less: Amortization of Fees	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	-	-	-	-	-
EBIT	140.5	160.5	162.1	163.9	164.9	165.5	165.3	163.8	172.6	170.8	(24.4)	165.1	160.2
Less: Interest Expense	32.8	25.9	18.9	11.9	4.6	-	-	-	-	-	-	-	-
EBT	**107.8**	**134.6**	**143.1**	**152.1**	**160.3**	**165.5**	**165.3**	**163.8**	**172.6**	**170.8**	**(24.4)**	**165.1**	**160.2**
Less: Taxes	26.7	44.4	47.2	50.2	52.9	54.6	54.5	54.0	57.0	56.4	2.6	54.5	52.9
Net Income	**81.0**	**90.1**	**95.9**	**101.9**	**107.4**	**110.9**	**110.7**	**109.7**	**115.6**	**114.4**	**(26.9)**	**110.6**	**107.3**

KPMG

Summary of financial forecast (4)

Projected income statement – contd..

USD in millions	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Revenue	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1	255.1
Less: Direct Operating Costs	51.4	56.5	62.2	68.4	75.2	82.7	91.0	100.1	110.1	121.1	133.2	146.6	161.2	177.4
Gross Profit	**203.7**	**198.6**	**192.9**	**186.7**	**179.9**	**172.3**	**164.1**	**155.0**	**145.0**	**133.9**	**121.8**	**108.5**	**93.9**	**77.7**
Less: OPEX														
Maintenance Costs	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.5	2.7	2.9	3.1	3.3	3.5	3.8
Major Maintenance Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lease Expense	16.6	17.8	19.0	20.4	21.8	23.3	24.9	26.7	28.6	30.6	32.7	35.0	37.4	40.0
Insurance	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Funding Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hospitality charges	3.6	4.0	4.0	4.4	4.4	4.8	4.8	5.3	5.3	5.8	5.8	6.4	6.4	7.1
PQA charges	9.3	9.3	9.3	9.3	10.2	10.2	10.2	10.2	10.2	11.1	11.1	11.1	11.1	11.1
EBITDA	**170.0**	**163.3**	**156.2**	**148.2**	**138.9**	**129.2**	**119.2**	**107.7**	**95.6**	**81.0**	**66.6**	**50.1**	**32.8**	**13.2**
Less: Depreciation	12.8	11.6	10.5	9.4	8.5	7.7	6.9	6.3	5.7	5.1	4.6	4.2	3.7	3.4
Less: Depreciation on IDC	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.3
Less: Amortization of Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EBIT	155.9	150.5	144.7	137.8	129.5	120.8	111.5	100.8	89.4	75.4	61.5	45.6	28.7	9.4
Less: Interest Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EBT	**155.9**	**150.5**	**144.7**	**137.8**	**129.5**	**120.8**	**111.5**	**100.8**	**89.4**	**75.4**	**61.5**	**45.6**	**28.7**	**9.4**
Less: Taxes	51.4	49.7	47.8	45.5	42.7	39.9	36.8	33.3	29.5	24.9	20.3	15.0	9.5	3.6
Net Income	**104.4**	**100.8**	**97.0**	**92.3**	**86.8**	**80.9**	**74.7**	**67.5**	**59.9**	**50.5**	**41.2**	**30.5**	**19.2**	**5.8**

KPMG

Frontier Works Organization BOT Ptc

Summary of financial forecast (5)

Projected cash flow statement

USD in millions	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EBITDA	**202.6**	**217.3**	**214.1**	**211.7**	**208.9**	**206.0**	**202.6**	**198.3**	**196.3**	**192.2**	**(5.1)**	**182.5**	**175.9**
Less: Taxes	26.7	44.4	47.2	50.2	52.9	54.6	54.5	54.0	57.0	56.4	2.6	54.5	52.9
Add: Funding Sources Less Uses													
CFADS	**175.8**	**172.9**	**166.9**	**161.5**	**156.0**	**151.4**	**148.1**	**144.2**	**139.3**	**135.8**	**(7.7)**	**128.0**	**123.0**
Less: Interest Expenses	32.8	25.9	18.9	11.9	4.6	-	-	-	-	-	-	-	-
Less: Repayment of Debt	113.8	118.1	120.1	122.8	109.7	-	-	-	-	-	-	-	-
Cashflow After Debt Service	29.3	28.8	27.8	26.9	41.6	151.4	148.1	144.2	139.3	135.8	(7.7)	128.0	123.0
Less: Funding (Withdrawel) of MRA	-	-	-	-	-	-	-	-	-	-	-	-	-
Cashflow before DSRA	29.3	28.8	27.8	26.9	41.6	151.4	148.1	144.2	139.3	135.8	(7.7)	128.0	123.0
Less: Funding (Withdrawel) of DSRA	2.5	(2.5)	(2.2)	(2.3)	(65.6)	-	-	-	-	-	-	-	-
Cashflow Available for Dividends	**26.9**	**31.3**	**30.0**	**29.2**	**107.2**	**151.4**	**148.1**	**144.2**	**139.3**	**135.8**	**(7.7)**	**128.0**	**123.0**

USD in millions	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
EBITDA	**170.0**	**163.3**	**156.2**	**148.2**	**138.9**	**129.2**	**119.2**	**107.7**	**95.6**	**81.0**	**66.6**	**50.1**	**32.8**	**13.2**
Less: Taxes	51.4	49.7	47.8	45.5	42.7	39.9	36.8	33.3	29.5	24.9	20.3	15.0	9.5	3.6
Add: Funding Sources Less Uses														
CFADS	**118.6**	**113.6**	**108.5**	**102.7**	**96.1**	**89.4**	**82.4**	**74.4**	**66.1**	**56.1**	**46.3**	**35.1**	**23.3**	**9.5**
Less: Interest Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Repayment of Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cashflow After Debt Service	118.6	113.6	108.5	102.7	96.1	89.4	82.4	74.4	66.1	56.1	46.3	35.1	23.3	9.5
Less: Funding (Withdrawel) of MRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cashflow before DSRA	118.6	113.6	108.5	102.7	96.1	89.4	82.4	74.4	66.1	56.1	46.3	35.1	23.3	9.5
Less: Funding (Withdrawel) of DSRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cashflow Available for Dividends	**118.6**	**113.6**	**108.5**	**102.7**	**96.1**	**89.4**	**82.4**	**74.4**	**66.1**	**56.1**	**46.3**	**35.1**	**23.3**	**9.5**

kpmg.com/socialmedia

kpmg.com/app

Download on the App Store