Annexure-VII

Welcome to Team of PNGRB & EIL

Capacity Assessment of Chainsa Jhajjar Hisar Pipeline

19th Sep, 2022

Chainsa-Jhajjar-Hisar Pipeline

Overview of CJHPL

Parameters Used For Capacity Determination

Determined Capacity and Limiting Conditions

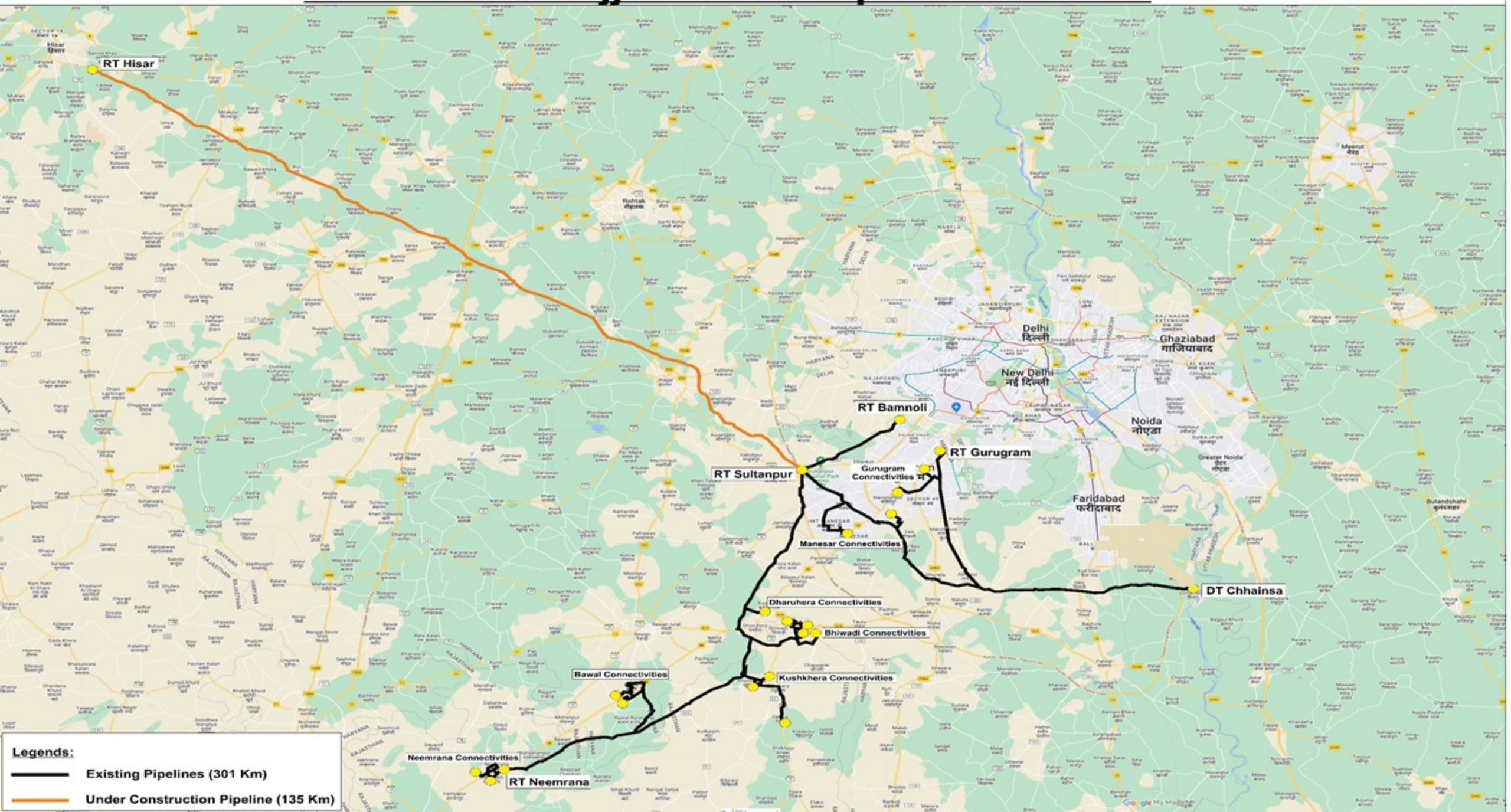
Chainsa-Jhajjar-Hisar Pipeline (Overview)

- Authorized By MoPNG, on 06th July 2007
- Approved by GAIL Board on 19th July 2007
- Acceptance of Authorization by PNGRB on 13th Dec., 2010
- Main Trunk Line Sections
  - Chainsa - Jhajjar (36" x 86 Km)
  - Jhajjar - Hisar (20" x 118 Km.)
  - Sultanpur – Neemrana (18" x 84 Km.)
- Gas source for the pipeline – Interconnection with Integrated HVJ Network at Chainsa
- Only Chainsa to Sultanpur and Sultanpur to Neemrana sections along with spurlines were commissioned
- Sultanpur-Jhajjar-Hisar section was put on hold due to lack of gas demand

Chainsa-Jhajjar-Hisar Pipeline (Overview)Contd.

- In 2018, in the context of 9th CGD bidding round by PNGRB, gas demand was reassessed and 12” size was found to be sufficient for Sultanpur-Jhajjar-Hisar Section
- PNGRB, in June 2019, conveyed its approval for completing the Sultanpur-Jhajjar-Hisar Section with revised pipe size of 12”
- Presently 12”x135 Km Sultanpur- Jhajjar- Hisar section is under construction

Chhainsa - Jhajjar - Hisar Pipeline Network



CJHPL Network Completed Section Details

Sl.	NAME OF P/L	LENGTH in Km	DIA (Inch)
1	Chainsa to SV4 Sultanpur	71.556	36"
2	Sultanpur -Neemrana (SNPL)	83.624	18
3	Sultanpur-Bamnoli	17.91	16"
4	Chopanki - Bhiwadi	9.69	12
5	Bawal Pipeline Network	27.294	10”/8”/4”
6	Dharuhera Pipeline Network	6.18	8”/4”
7	Bhiwadi Pipeline Network	28.128	8”/6”/4”
8	Kushkhera Pipeline Network	19.859	8”/4”
9	Neemrana Pipeline Network	16.005	8”/4”

Parameters Considered for Capacity Determination

- Software Package Used : Emerson's Pipeline studio version 4.2.1. TNET for gas and liquid pipeline.
- Diameter and Length as per Operational pipeline
- Source – Interconnection at Chainsa SV/Comp. station of Integrated HVJ Network after comp. discharge
  - Pressure - 95 Kg/cm2
  - Temperature – 50 deg C
- Roughness- Following is used in line with PNGRB regulations

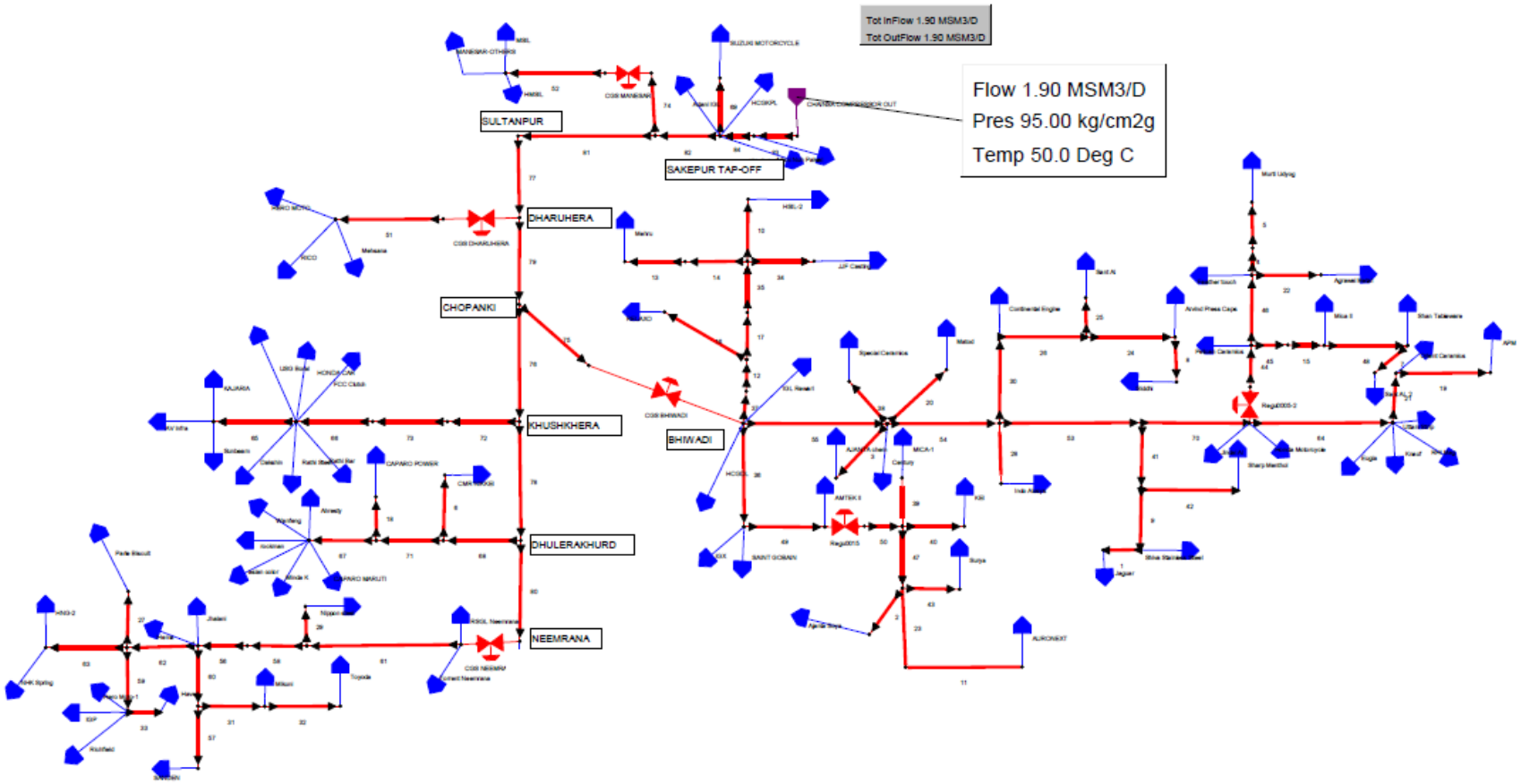
Type of Material	Roughness (micron)
- With internal coating	10-15
- Without internal coating	40-45

- Flow equation - Panhandle Modified ; Panhandle A for Pipe size ≤ 24"; Panhandle B for Pipe size > 24"
- Velocity - maximum allowable velocity shall be 20m/sec (as per PNGRB regulations)
- Volume and pressure at customer terminals : As per contract
- Terminal Drop of 4 Kg/cm2 has been considered based on previous capacity assessments

Gas Composition

S.No.	Component	Mole %
1	Methane	92.02
2	Ethane	4.47
3	Propane	0.64
4	I-Butane	0.03
5	N-Butane	0.02
6	N2	0.17
7	Co2	2.65

TYPICAL FLOW DIAGRAM OF CJHPL



Limiting Conditions

- For future deliveries, free flow has been envisaged at the end of trunk line at Neemrana CGS upstream while maintaining a minimum required line pressure of 53 Kg/cm2 g.
- Present Capacity Determined – 9.87 MMSCMD
- In the initial years of operation, without compressor at Chainsa, capacity was in the range of 5.7 to 6.0 MMSCMD which gradually increased with addition of customers.

Thank You