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Project Title: Studies on Gas Data Associated with National-Wide Power System Master plan

Department:	Power Systems Operation and Planning	Employer:	Niroo research institute
Project/Program Manager:	Azim Saliminia Lahiji	Executor:	Mojtaba Gilva nejad
Project Financial Code:	600033	Project Quality Code:	PTPN10-2
Type of Project/Program:	Associated with Agreement	Assistant:	Deputy of Technology

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Project Necessity:

In Iran's power system master plan, gas fuel-based power plant is one of the candidate type. Therefore, Comprehensive gas data will be needed to provide expansion plan of gas fuel-based power plant in future generation mix.

Accordingly, the main purpose of this project will be to collect, compile and finally processing on the gas data as a one of inputs in Iran's power system expansion plan.

Gas Data associated with Iran's Master plan horizon 2030, is divided into four types:

- 1) Gas extraction capacity: indicates the amount of current and future extractable. This project provides the expansion plan of natural (crude) gas extraction in the whole country up to the horizon of 2030.
- 2) Expansion plan of gas line network: indicates the expansion plan for gas transmission paths up to the horizon of 2030. Data includes paths, size and capacity of pipelines.
- 3) Investmet cost of gas line network: indicates the investmet cost of gas line network including construnction and loss cost.
- 1) Hourly gas consumption: indicates the historical hourly gas consumption data of metropolitan cities for the last 5 to 10 years.

Project Goals:

Collection, compilation and finally processing on the gas data as a one of inputs in Iran's power system expansion plan.

Abstract:

Understanding the role of gas-fired based generation plant in the future generation mix needs the comprehensive gas data will be needed. Accordingly, this project is presented in the five chapters. In the first chapter, the strategies for gas data collection is presented along with field study on gas data. The first phase provides required gas data for Iran's master plan in the horizon 2030. Then, all data will be introduced in second to fifth chapters. Chapter 2 provides information on gas extraction capacity. This data includes extractable gas resources, natural gas supply outlook, natural gas supply (production) forecast, gas fuel forecast for the country's power plants in the horizon 2030. In the third chapter, information associated with investment cost of gas pipeline (including construction and loss cost) is presented based on update prices.

In the fourth chapter, gas consumption historical data (hourly, daily and monthly) will be provided for candidates cities. In addition, how to use the data and analyze it for different situations is described. Finally, the gas pipeline expansion plan and existing pipeline are introduced. Data includes paths, size and capacity of pipelines. In addition, chapter 5 provides export plan data to neighbor countries. Accordingly, the gas pipeline expansion plan for exportation is presented in horizon 2030.

Steps and Methodologies:

Step 1: Study and review reports, technical guidelines and existing experiences

Step 2: sessions with experts in gas and oil, energy management team and expansion planning project team in NRI.

Step 2: Prepare, compile and processing gas data for Iran's mater plan in horizon 2030

Main Results (technical outputs, patents, papers, books, reports, etc.):

- 1- technical report in order to facilitate data accessing.
- 2- Gas data bank in Exel