# The 34<sup>th</sup> JCCP International Symposium



# <Gas Master Plan: GMP>

Planning for Gas Utilization in Oil/Gas Producing Countries



### **TOYO ENGINEERING CORPORATION**

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- I. Gas Master Plan (GMP) ?
- II. GMP Stage Flow
- III. GMP Impact to Gas Utilization
- IV. Action Plan for Gas Master Plan
- V. Planned Work Schedule on Each Phase

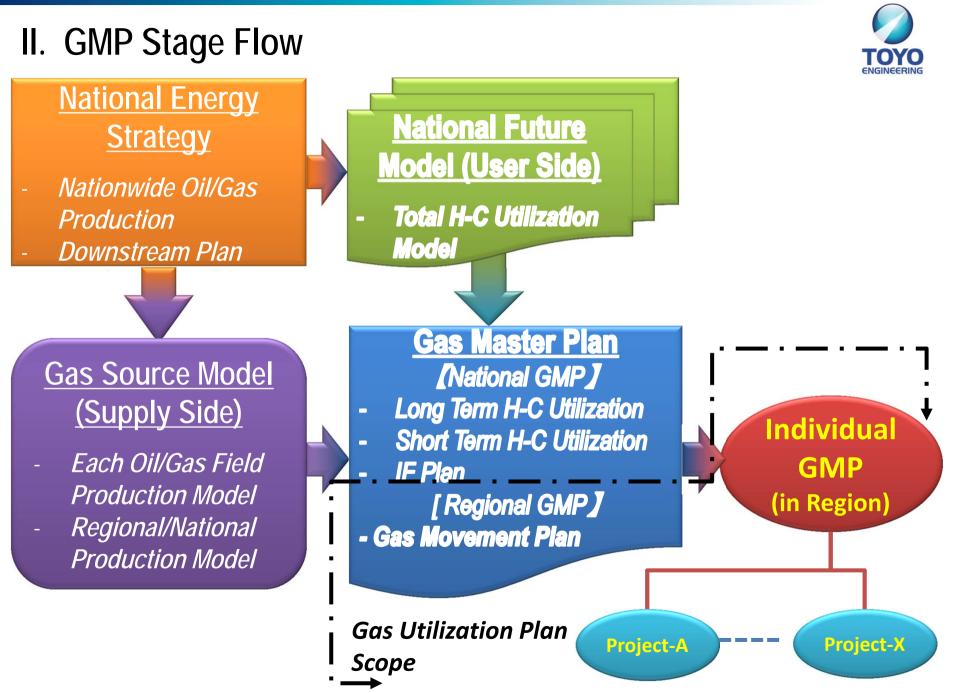
### I. Gas Master Plan (GMP)?



- Conventional Method : Gas Utilization Plan
- New Concept : Gas Master Plan

### The basic differences between the above are;

Item	Gas Master Plan	Gas Utilization Plan
Applied Country	Oil/Gas Producing Country	No limitation
Covered Scope	Oil/Gas Reservoir to End User	Gas Supply to End User
Products	<ul> <li>Production Profile</li> <li>Composition Profile</li> <li>Gas Movement Plan</li> <li>Gas Utilization Facilities Plan</li> </ul>	<ul> <li>Gas Receiving Plan</li> <li>Gas Utilization Facilities Plan</li> </ul>
Characteristics	Every Plan by Nationals	Gas Receiving by Oil Co.



# III. GMP Impact to Gas Utilization Plan



Item	Gas Master Plan	Impact
Done by	Government, National Oil/Gas Company	Total Hydrocarbon Utilization as Government
Supported by	Upstream/Downstream Engineering Company	Coordinate/Negotiate with IOCs by Reliable High Technologies
Products Character	<ul> <li>Long/Short Term Oil/Gas Production Model</li> <li>Regional Characteristics Consideration</li> <li>Benefit only for Government</li> <li>Concrete Execution Model</li> <li>Several IF Plan included</li> </ul>	<ul> <li>Materializing Independent Government Plan</li> <li>Long Term Executable National Development Plan</li> <li>Connecting to Gas Utilization Plan</li> <li>Changeable per conditions of the Government</li> </ul>

# **IV. Action Plan for Gas Master Plan**



#### Phase-I (Policy/Concept)

Investigation of Natural Gas Supply/Demand

- Data gathering (Production Profile, Component Profile)
- Long & Short term gas supply/demand balance
- Governmental H-C strategy (Export. Products w/Volume)
- Quantitative analysis/ plan (Facilities Introduction Plan)
- Marketing Survey

### Phase-II (Basic Plan)

Vision & Map for Areawise Industries

- Areawise Characteristic, Industrial Development Plan
- Regional Market Survey
- Gas Movement Plan in the Country
- Location Candidates for Facilities Mapping
- Rehabilitation Plan for existing facilities(if any)
- Newly plan for gas infrastructures

#### Phase-III (Actual Plan)

Detail study of Areawise infrastructures

- Gas supply network plan in the Region
- Preparation of Facility package along with P-II
- Gas field development plan for stable feed
- Effective facility plan based on gas production profile
- Export, Domestic
   Movement & Domestic
   Consumption plan

### Individual Project Package for Implementation (F/S=>FEED=>EPC)

**Governmental Policy/Strategy** 

# IV. Action Plan for Gas Master Plan-3 (Utilized Technologies in Each Phase)



### Phase-I : Nationwide Plan

Upstream	Infrastructure	Downstream	General
<ul> <li>Reservoir Modelling</li> <li>Production Modelling</li> <li>Gas Analysis</li> </ul>	<ul> <li>Power Demand Forecasting</li> </ul>	<ul><li>Consumption Analysis</li><li>Industrial Modelling</li><li>National FS</li></ul>	<ul> <li>Nationwide</li> <li>Industrial</li> <li>Plan</li> </ul>

#### Phase-II : Regionwide Plan

Upstream	Infrastructure	Downstream	General
<ul> <li>Production Planning</li> <li>Plateau Rate Study</li> <li>Infrastructure Plan</li> <li>Movement Plan</li> </ul>	<ul> <li>Regional Power</li> <li>Demand</li> <li>Power Move't</li> <li>Plan</li> </ul>	<ul> <li>Characteristics of Industries</li> <li>Regional FS</li> </ul>	<ul> <li>Long Term</li> <li>Investmen</li> <li>t Study</li> </ul>

#### Phase-III : Individual Plan

Upstream	Infrastructure	Downstream	General
<ul> <li>Field Dev't Plan</li> <li>Field Prod'n Model</li> <li>GOR/WOR Analysis</li> </ul>	<ul> <li>Ind'l Power</li> <li>Gen'n Plan</li> <li>Grid Plan</li> </ul>	<ul><li>Product Plan</li><li>Pet-Chem Plan</li><li>C1 Utilization Plan</li></ul>	

# V. Planned Work Schedule on Each Phase



**Outline Schedule for Gas Master Plan Development** 

