

# CCOP – DMF Project on Petroleum Resources /Reserves Classification and Reporting System

Workshop on Reporting of Petroleum Resources, Reserves and CO<sub>2</sub> Injection Projects (S4)  
22-23 April 2015, Sukosol Hotel Bangkok, Thailand

## Summary Report:

The Workshop was successfully conducted in Bangkok with a total attendance of 44 participants from 8 CCOP member countries and Norway. The number includes the experts on resource classification and reporting from Norwegian Petroleum Directorate (NPD), Gaffney Cline & Associates (GCA), PETRONAS (Malaysia) and SINOPEC (China) and from the CCOP Technical Secretariat. About half of the participants are from Thailand, representing the Department of Mineral Fuels, subsidiaries of PTT and Professional organizations. About 30% of the participants are female.

The opening address was delivered by **Dr Adichat Surinkum**, Director of CCOP Technical Secretariat, in which he welcomed the participants as key stakeholders in the sustainable development of the petroleum resources of CCOP countries. He also encouraged the participants to participate actively in the discussions, contribute their knowledge and experiences on resource management topics and share the learning's to their colleagues when they return home.

As in any CCOP Workshop, S4 provided a forum of sharing experiences and best practices to contribute to the capacity development objectives of CCOP. In this particular workshop the success stories of selected member countries (Malaysia and China) and Norway, in petroleum classification and reporting are presented (and discussed) with potentials to be replicated and adapted by other member countries. GCA, a very prestigious consulting company, was also invited to present the challenges and solutions involved in the resource maturation process, and some of the 'grey areas' that companies and regulators must deal with.

### Sharing of Best Practices

**Mr Mat Arifin Ismail** and **Mr Jamin Jamil Mohd Idris**, both senior managers of Malaysia Petroleum Management Unit, PETRONAS, delivered a presentation on how their company prepares its reserves/resource report highlighting the framework on the basis for reporting, the contents of the report, source of data, workflow undertaken, timelines, and the technical assurance and approval processes. The

report also indicates the CO<sub>2</sub> content of each reservoir (P50). PETRONAS uses a project-based classification system that is aligned to the Petroleum Resource Management System (PRMS) of SPE, with some modifications.

The report of China as delivered by **Ms. Xueqian Zhu**, senior engineer of Petroleum Exploration and Production Research Institute of SINOPEC (PEPRIS), highlighted SINOPEC's reserves/contingent resources management system. The main body of the presentation is divided into

1. Reserves/Contingent Resources Management System
2. SINOPEC Reserves Management Organization and Responsibilities
3. Reserves Management & Declaration Requirements

The focus of the system is on enhancing exploration and development efficiency that will result to the full utilization of petroleum resources. The system also gives high importance to the sub-economic resources as potential future projects of the company.

Within China, SINOPEC's reporting system complies with the Ministry of Land and Resources' (MLR) Oil and Gas Reserves Calculation Regulations. For its business overseas, SINOPEC would prepare the report according to the requirements of the country where they are in operation. Internally, there are sets of regulations for all SINOPEC subsidiaries to comply:

1. SINOPEC Oil and Gas Proved Reserves Calculation Regulations
2. SINOPEC Oil and Gas controlled reserves Calculation Regulations
3. SINOPEC Oil and Gas Predicted Reserves Calculation Regulations.

As presented, SINOPEC has developed different sets of internal regulations according to resource class and is stricter than the requirements of MLR. The reserves management procedures are specified in different reserves class. There are set of rules and clearing house committees that will look into the maturation of resources to development and production.

**Mr Tom Andersen** of the Norwegian Petroleum Directorate (NPD) delivered the presentation on Norwegian reporting and classification system. The presentation focused on NPD reporting of reserves, classification, reporting process, evaluation and use of data. Like the country reports from Malaysia and China, the Norwegian system is also project-based and aligned to the PRMS, with some modifications. The project maturity is assessed and monitored by NPD from prospect level to development and production. The possibility of additional reserves through IOR and EOR technologies are also thoroughly looked into by NPD and discussed with the operators. The Norwegian system has gone through several process of review and revisions in order to meet the needs of the Government primarily for forecasting (production, investment and cost forecasts), policy development, and environmental management and planning.

The NPD presentation also highlighted the challenges of a classification system versus reporting guidelines. In particular, on what approach to take to find a common understanding of how to report comparable projects across fields, and to how detailed should the reports be (?). To address these challenges, there are on-going works within NPD aimed at incorporating some of the practicality in the reporting guideline into the classification guideline. These are also discussed with the industry and other stakeholders.

The NPD classification system was used as a case study in mapping of a national system to the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources (UNFC) 2009 and mapping to PRMS system. The mapping exercise proved that the Norwegian system could be mapped to the UNFC 2009.

**Mr Eddy Tan**, Regional Director for Acquisitions & Divestments Advisory of GCA (Singapore) delivered a presentation entitled, “Exploration to Reserves and Production – the monetization highway”. The presentation highlighted objectives of the resource maturation process is to provide management and investors with:

- A set of resource estimates that reflect the stage of maturation.
- A method for companies to track and measure the resource maturation process.
- Resource estimates that can reliably be compared between companies.

The various reporting challenges and ‘grey’ areas in the reporting processes starting from the exploration phase (prospective resources) - where the journey begins, appraisal stage (contingent resources), and development phase (reserves) were the central topic of the presentation. The maturation of resources along the ‘highway’ is not straightforward and different interpretations of the ‘rules’ are possible. The major move toward unconventional resources has further complicated the process. The presentation also informed the participants that the Society of Petroleum Engineers (SPE) Oil & Gas Reserves Committee, the body responsible for the review and update of the PRMS, is currently reviewing a number of the issues raised in the presentation.

The PRMS system of 2007 provides the codes and standards for the specifications of petroleum reserves and resources to UNFC 2009. The SPE, World Petroleum Congress (WPC), Association of American Petroleum Geologists (AAPG), Society of Petroleum Evaluation Engineers (SPEE) and Society of Exploration Geophysicists (SEG) endorsed the said alignment.

### Group Sessions

The participants were divided into groups to discuss about resource maturation - from prospects to development and production or the “monetization highway”, guided by the following questions:

1. Does your government require for companies to report reserves and resources?
1. Identify challengers or “show stoppers” in the maturity highway.
2. As government representative (NOC & Regulator), what are the solutions to the challenges?

The group sessions resulted to a very lively discussions among the participants.

### The Way Forward

The member countries are given the task of reviewing their petroleum reporting and classification system and to look for areas of improvement. They can also conduct an exercise of mapping their system either into the UNFC 2009 or PRMS systems. Any issues/problems encountered during the mapping exercise has to be communicated immediately to CCOP TS for possible solutions.

### Summary and Conclusions

1. Petroleum classification and reporting in CCOP countries - most of the member countries are using the PRMS system (modified according to country needs). The PRMS system is aligned to UNFC 2009.
2. There is an agreement among countries to use UNFC 2009 as common template for future reporting.
3. The workshops provides opportunities to learn from one another not only in the reporting procedures but also how each country is leveraging on their data for national planning and investment promotions. Some of the best practices presented and discussed can be replicated to improve the national reporting system.



*Group photo of S4 participants*