

Justification for proposed CBM well drilling at Forest Area

Substantial exploration work has been carried out by Essar Oil and Gas Exploration and Production Limited (EOGEPL) for evaluating the Coal Bed Methane (CBM) potential of the Raniganj CBM block (RG-east-2001/1) since 2002. In house study by Essar on these exploration data have indicated presence of a CBM gas Fairway of about 200 sq.km out of 500 sq.km block area. It is pertinent to highlight that as energy transition is occurring to address issues of climate change, the Government's vision is to increase gas usage in our energy mix from the current 6% to 15% in this decade. Our objective is to exploit CBM Gas resource available in the fairway and produce this clean & efficient source of energy to meet the industry's demand around Durgapur region and also support the Gas based economy under the vision of *Atmanirbhar Bharat* by supplying the gas through *Urja Ganga Gas Pipeline* eventually to the city of Kolkata for use as transport fuel replacing diesel and petrol. However ~30% of the prospective area of CBM fairway falls in the forest Land. Based on our previous Forest Diversion *permission dated 29th April-2014* "for directional and horizontal drilling of CBM wells underneath the forest land", EOGEPL drilled number of wells to exploit the resources beneath the forest area with help of deviated wells having surface footprint at non forest area. However, a large portion of resource lies below the inaccessible forest cover is still required to be extracted. Presently, EOGEPL requires few patches of the forest land for drilling & extraction of CBM potential of the most prospective part of CBM fairway.

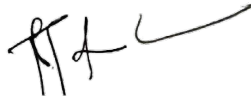
Generally CBM wells are drilled at a fixed distance on the basis of reservoir parameters. Based on present production behavior and geological consideration, it is necessary to drill wells at a spacing of 60 acres for proper extraction of CBM gas within the fairway zone. Accordingly 45 well pads were identified in forest area for the project but which now have been minimized to 24. Considering typical production life cycle of CBM wells the land will be required for a duration of around 30 years. After which the entire forest land will be revert back to the Forest department.

Around 60 Billion Cubic Feet (BCF) of recoverable methane gas resource is planned to be extracted from the planned 82 wells from 24 well pads in the forest area. The proposed wells are located within good reservoir area having very good permeability, gas content, saturation etc. Areas developed adjacent to the forest has already proved CBM potential and presently producing good volume of gas. The following points have been given prime focus in order to reduce the forest land requirement to the barest minimum:

- While selecting the wells inside the forest area due care has been taken to use minimum forest land wherever possible,
- The approach road will be planned using the existing inspection path and its branches in order to minimize the feeling of trees along the approach road,

- Well site size have been kept to a minimum area considering number of wells planned from a single pad, thereby reducing the total forest footprint.
- Inspection path is to be used as approach road, wherever possible to the well sites,

After a thorough survey, and optimizing the land requirement will be **17.7 hectors**, which is the bare minimum requirement for the project. This includes the well site area, approach road to the well pads and area for laying pipeline within Forest area. Inter well interference is very much required for optimal production and recovery in case of CBM. As the good reservoir is in continuation beneath the forest, the need for forest area is unavoidable.



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(Authorized Signatory)

For Essar Oil and gas Exploration and Production Limited

Date: 22nd April, 2022

Place: Durgapur