

Subject: Establishment of Business Model for Demonstration of an Integrated Technology Package for creation of smokeless villages using biogas/ bio-energy systems and meeting ‘Life-line Energy’ envisaged in ‘Integrated Energy Policy’ of Planning Commission.

Cooking requirement in most of the villages is met by burning biomass in traditional cook-stoves/ chulhas. It leads to health hazards for women and children by cooking in smoky kitchens and the black carbon, carbon mono oxide, carbon dioxide and other gases emitted by burning of biomass in cook-stoves. There is a pressure for reducing black carbon emission from traditional cook-stoves owing to its effect on climate change.

2. ‘Integrated Energy Policy’ of Planning Commission recommends providing monthly entitlement of 30 units of electricity and 6 kg of LPG or equivalent amount of kerosene for one or both ‘Life-line energy’ needs. Biogas-fertilizer plants of 1.5 to 2 cubic meter capacity per family are one of the most suitable options for rural areas for supplying the lifeline energy for cooking and lighting. Considering LPG option for providing ‘life-line energy’ for cooking, the required infrastructure of distribution/ logistics, availability and cost of LPG may not permit to provide LPG to all the households in all the villages of the country.

3. A solution has been conceptualized for meeting ‘life-line energy’ needs through renewable energy by using cattle dung and loose and leafy biomass, and woody biomass being used in villages in rural and remote areas for cooking food and meeting heat energy requirements. However, any such intervention for providing energy using biomass raises the issue of availability and supply of surplus biomass feed material for biogas plants for providing biogas for cooking and operating biomass gasifier systems for providing electricity as a ‘tail-end grid’ solution.

4. For the purpose, ‘Model Pilot Projects’ in about 100 villages are proposed to be taken up for collecting biomass material from various households, already being used in the traditional cook-stoves/ chulhas and providing the households clean biogas fuel in return under a suitable arrangement provided their biomass fuel compensates biogas. For the deficits in providing biomass feed material of equivalent fuel value the beneficiary may pay for the same at predefined terms. The service provider on the other hand may also agree to provide LPG in case pre-determined biogas quantity is not made available due to seasonal variation or any other reason.

5. The cattle dung/ cattle dung cakes and loose and leafy biomass wastes (agro and forest wastes) collected from the selected village can be processed in biogas plants for generation and supply of biogas back to the households and bio-fertilizer produced from biogas plants as slurry is made available for improving soil-fertility and increasing crop production in the village. The woody biomass collected from the selected village can be processed in biomass gasifiers for generation of producer gas based electricity. The

electricity thus generated can be fed to the Village Electricity Grid (VEG) as a 'tail-end grid' solution for electricity supply. Thus, the 'life-line energy' requirement in the village can be met through supply of biomass based biogas and electricity in addition to providing bio-fertilizer produced from biogas plants.

6. This model aims to provide an opportunity to burn the woody biomass at a much superior efficiency as compared to its burning in traditional chulhas and thereby ending in making available surplus biomass. This would also help in reducing shortages of biomass fuel supply to gasifier system which may be installed for providing electricity to the village. The supply of biomass fuel together with non-use of biomass cook-stoves would help in fighting climate change and attaining a cleaner environment in villages free from smoke in addition to reducing health problems of rural folks and generating local employment and decentralized micro-enterprises in rural areas. These micro-enterprises may form confederation of larger corporate bodies or a company.

7. The Ministry of New and Renewable Energy invites 'Expression of Interest' (EOI) from the public and private sector companies and entrepreneurs who may be interested in partnering with the Ministry of New and Renewable Energy in testing such a model in about 100 villages across the country as a part of an attempt for marching towards creation of smokeless villages in the country and also providing 'life-line energy'. The public and private sector companies can also use their Corporate Social Responsibility Funds (CSR) for the purpose to supplement the financial and fiscal incentives provided by the Ministry of New and Renewable Energy for such projects.

8. The format available for demonstration of "Integrated Technology Package for Biogas Generation, Purification and Bottling" under the icon 'Advertisement' on the website of the Ministry <http://mnre.gov.in> may be used as a base format for modification and development of suitable format for the smokeless villages as envisaged herein. **50% of the cost (except cost of land) of such projects would be provided by the Ministry of New and Renewable Energy in accordance with R&D Policy guidelines of the Ministry.**

9. The EOI may be sent to Adviser (Bio-energy) of this Ministry latest by 15th February 2010.

(Dr. A.R. Shukla)
Adviser (Bio-energy)
Ministry of New and Renewable Energy
Block No.14, C.G.O. Complex,
Lodhi Road, New Delhi-110003
Telefax: 011-24361604
Mobile: 09810585602
E-mail: shuklaar@nic.in