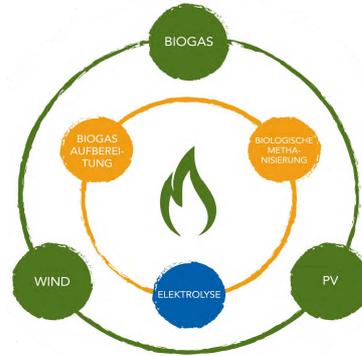


**Summary of the study „Cost analysis of renewable gases“  
(Dr. Uwe Albrecht, Matthias Altmann, Jan Michalski, Tetyana Raksha, Werner Weindorf)**

**Results of the study**

- As an increasing proportion of variable renewables is fed into the grid, this leads to storage requirements
- Renewable gases can make a major contribution:
  - **Bio methane** produced using biogas featuring the quality of natural gas
  - Electrolytically produced **renewable hydrogen** using renewable electricity as well as
  - **Renewable methane** produced from renewable hydrogen and carbon dioxide (CO<sub>2</sub>) from renewable sources using a catalytic or biological methanation process
- **Output-oriented marketing options** include transit of renewable gases through the natural gas grid with subsequent reconversion in combined cycle and CHP units, as well as storage of the renewable gas with subsequent reconversion, marketing of renewable hydrogen as fuel for vehicles, industrial use of renewable hydrogen and being fed-in to the natural gas grid



- **Input-oriented marketing options** include provision of power balancing, system support according to the green electricity privilege, load management in terms of accounting grid management as well as optimising direct marketing with EEG market premiums

**Conclusion and recommendations**

- As it is, renewable gas cannot be commercialised until a suitable funding framework is in place
- Funding objective: Introducing the required technology to the market early on in order to support further development and reduce costs. Funding must at least cover production costs in order to set sufficient investment incentives and control the duration and deployment of electricity storage, so that the efficient use of energy is always guaranteed
- Set attainable prices for reconversion, sales to industrial consumers, feed-in to the natural gas grid is too limited
- Short/mid-term: The greatest quantitative potential lies in marketing options that feature the lowest costs in terms of value (reconversion, industrial clients, feed-in to the natural gas grid); highest revenues for renewable hydrogen are within the transport sector (foreseeably the only sector that can attain cost coverage)
- Long-term: Greater volume and price potential are within the transport sector
- Large-scale storage of power will be required for the increasing feed-in of VRE to the grid. This means that, in the short and mid-term, the funding of renewable gas units will be an important factor, not only in stimulating further development of this technology, but also during the commercialisation phase and for its introduction onto the market.

**For a more detailed analysis of the costs and an overview of the marketing options please refer to the complete study, also available on our homepage: [www.bee-ev.de](http://www.bee-ev.de).**

Study cooperation partners:

