



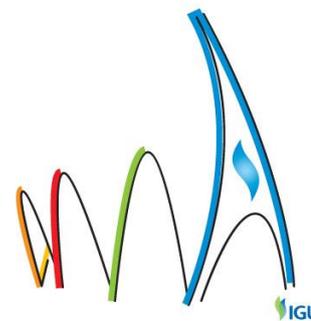
# Value-driven evaluations of gas

## Implications for communication strategies

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### Table of Contents

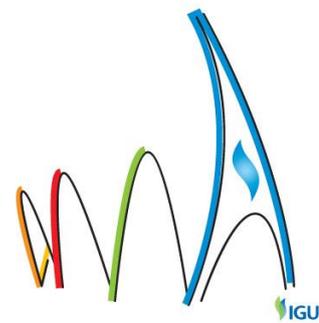
Table of Contents .....	1
Background .....	1
Aims .....	2
Methods .....	2
Results .....	2
Conclusions.....	3
References.....	3

### Background

The role that different forms of gas will take in future (sustainable) energy systems depends largely on how they are evaluated by the public. People’s evaluations of energy alternatives are often *value-driven* [1,2]. They favour energy alternatives that, they think, support their important values, and disfavour energy alternatives that, they think, threaten their values.

Values are abstract life goals or ideals that define what is generally important to people in their lives [3]. Four types of values can be distinguished: egoistic (focus on personal resources, such as money and status), hedonic (focus on comfort and pleasure), altruistic (focus on consequences for other people), and biospheric (focus on nature and the environment) [4]. These values have different effects on public evaluations of different energy alternatives. For example, the stronger their biospheric values, the more people favour renewable energy and the less they favour nuclear energy, whereas exactly the opposite was found for egoistic values [1,5]. Importantly, people tend to evaluate energy sources overly positive or negative on many different aspects, including aspects that are not key given their values, in line with their value-driven views. For example, stronger egoistic values led to evaluating nuclear energy as more environmentally-friendly, even though environmental qualities should not be very important given these values [1,5]. Therefore, it is important to gain insight in the question: which values drive public evaluations of different energy alternatives? Even more importantly: what implications do these value-driven views have for communications strategies?

We studied value-driven evaluations of gas in the Netherlands. Gas has not been prominently debated in the Netherlands until recently. As a result, people may not have thought about the implications of gas for their important values. At the same time, recent developments in the Dutch gas sector (gas-related earthquakes, political unrest in gas-exporting countries, controversial gas production methods such as shale gas, development



of gas-based sustainable solutions such as “green gas” and “power to gas”) may motivate people to think about gas from the perspective of their important values. Therefore, value-based opinions about gas may be developing rapidly and the role of communication strategies may be crucial at this point in time.

### **Aims**

We studied how values influence evaluations of gas when gas is promoted as a sustainable energy source. Communication specialists assume that if people learn about the potential environmental benefits of gas, they will evaluate gas positively, particularly when they care about the environment and endorse strong biospheric values. The aim of this study was to test whether stronger biospheric values indeed lead to more positive evaluations of gas, if gas is promoted as sustainable. We tested this for natural gas and for sustainable gas innovations, namely green gas and power-to-gas.

### **Methods**

An online questionnaire study was carried out among a sample of the general Dutch population in November-December, 2013. In total 320 respondents completed the study<sup>1</sup>. Respondents evaluated the importance of different values [3]. Next, respondents evaluated natural gas that was described as a (relatively) sustainable energy source. Half of the respondents evaluated natural gas that was described as sustainable and as a part of current energy systems, whereas to the other half of the respondents evaluated natural gas that was described as sustainable and as a part of future energy systems with renewables. Afterwards, all respondents evaluated sustainable gas innovations, namely green gas and power-to-gas; short descriptions of these innovations were given.

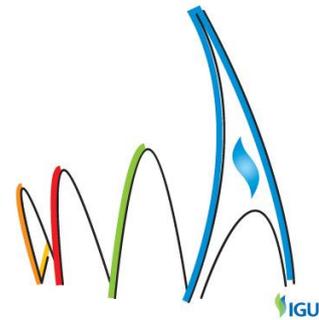
### **Results**

Respondents evaluated natural gas relatively positively. They perceive natural gas as a convenient energy source that contributes to the Dutch economy and helps meet energy demand, but they think that gas is quite costly. The environmental consequences of natural gas were not evaluated very positively nor negatively; similar results were found for the perceived consequences of gas for health and safety. Evaluations of sustainable gas innovations were also rather positive; we did not ask for evaluations of specific characteristics of these innovations, since people may feel they know little about them.

Our main research question was whether or not stronger biospheric values would lead to more positive evaluations of gas when it is promoted as sustainable, as it is commonly expected in practice. We found that stronger biospheric values did not lead to more positive

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<sup>1</sup> The total number of responses after controlling for the time it took participants to complete the survey, the repetitiveness of answers, and the answers to the control questions.



evaluations of natural gas, irrespective of whether natural gas was presented as a part of current energy systems or as a part of future energy systems with renewables. Yet, when sustainable gas innovations were presented (i.e. green gas and power-to-gas), stronger biospheric values did lead to more positive evaluations of these innovations.

### Conclusions

Gas is increasingly being promoted as a (relatively) sustainable energy source, expecting that people will evaluate it positively because they care about the environment and strongly endorse biospheric values. We found, however, that stronger biospheric values only led to more positive evaluations of sustainable gas innovations (i.e. green gas and power-to-gas), but not of natural gas.

Both natural gas and sustainable gas innovations were evaluated rather positively by the Dutch respondents. However, the underlying effects of values on these evaluations differ, which has important implications for sustainability claims. Natural gas is seen as a convenient energy source that has benefits for the economy. Yet, the current results suggest that stressing positive implications of natural gas for people's biospheric values will probably not result in more positive evaluations of natural gas. Sustainable gas innovations, on the other hand, were evaluated more positively by people with stronger biospheric values. This suggests that sustainability claims may be more effective when promoting innovative gas solutions that do not rely on fossil fuels.

### References

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