***STAKEHOLDER ENGAGEMENT FOR THE DEVELOPMENT OF INDICATORS FOR SUSTAINABLE ENERGY DEVELOPMENT***

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## Overview

Stakeholder engagement in decision-making and policy development is progressively more recognized. It leads to a more comprehensive picture, aids in the understanding of complex concepts and increases public acceptance (Sovacool, 2012). In a data-driven world, the significance and usefulness of sustainability metrics for policy-making and tracking progress towards policy goals is becoming generally acknowledged. Thus, it seems logical and valuable to have stakeholders inform the selection of sustainability indicators. Sustainable energy development is a complex and multi-dimensional concept that has no universally accepted definition. Despite this lack of a definition, the importance of sustainable energy development and the role of energy in achieving sustainable development is recognized as evidenced by the UN’s SDG7 on affordable and clean energy (United Nations, 2015). Through stakeholder engagement, it is possible to capture a comprehensive picture of what sustainable energy development entails and identify the sustainability goals of various stakeholders. Indicators to track progress towards sustainable energy development can be selected based on these identified sustainability goals (Shortall et al. 2015). For this research, an indicator selection process rooted in stakeholder engagement has been developed and applied within the Icelandic energy system. The result of these efforts is a set of indicators for sustainable energy development in Iceland. These indicators reflect the important issues of energy development in the country and enable the monitoring of progress towards sustainable energy development.

This research is structured as follows: a literature review of sustainable energy development, the associated indicators, and approaches to indicator selection was conducted. Subsequently, a methodology for the selection of indicators for sustainable energy development was developed rooted in stakeholder engagement. This methodology was applied for the selection of indicators for the Icelandic energy system.

## Methods

An indicator selection process was developed based on a review of established approaches to indicator selection, Stakeholder engagement was put at the center of that process to ensure the relevance and comprehensiveness of indicators. The Icelandic energy system was analysed as a case study and its stakeholders identified. Key stakeholders were engaged through individual semi-structured interviews, public opinion was captured through focus groups, and results were verified through a Delphi survey sent to all stakeholders engaged. Emerging themes and sustainability goals from stakeholder engagement were used as a basis for indicator selection. A comparison with established indicators for sustainable energy development even further shaped indicator development.

## Results

A methodology for indicator selection that is rooted in stakeholder engagement is presented as a valid and robust approach. To showcase the presented indicator selection process, it was applied for the development of indicators for sustainable energy development in Iceland. The Icelandic energy system was analysed as a case study and valuable insight into the sustainability goals of various stakeholders was gained from stakeholder engagement. A common thread from stakeholder interviews was a perceived lack of a comprehensive long-term energy policy in the country. This even further adds value and immediacy to this research. Six overarching sustainability goals were identified: nature conservation, socially beneficial energy system, economically efficient energy system, energy security, sustainable energy production, and sustainable energy consumption. Over 50 indicators were selected to track progress towards these goals and sub-goals and thus can be used to track progress towards sustainable energy development in Iceland.

## Conclusions

The usefulness and importance of engaging with stakeholders during the selection of indicators is demonstrated, especially when the goal is to track progress towards a complex and ill-defined concept such as sustainable energy development. Therefore, an indicator selection process rooted in stakeholder engagement is developed. By applying the proposed process, indicators for sustainable energy development in Iceland are developed. A comprehensive and representative picture of the Icelandic energy system and what a sustainable energy future entails is captured through stakeholder engagement.

## References

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