BISEPS

Business clusters Integrated Sustainable Energy PackageS

CROSS BORDER TASK FORCE 1

17/11/2016

REPORT

Contents

Workshop 1 | Smart energy data to catalyze low-carbon solutions in business clusters

Presentation

The basic idea of the project is that the scale of a business cluster is very suited for (i) sustainable energy production and (ii) energetic synergies between businesses. However, the business cluster level poses a great challenge regarding data collection. Information from the demand side of the entire cluster is needed to successfully run the BISEPS-tool.

Feedback session: lessons learned

- **WHO are the users of the model?**
    - Non organized cluster businesses (or individual businesses): smaller group of businesses should be targeted as well. In case users are limited to (big) business clusters, risk to miss some interesting cases.
    - The BISEPS model is not really suited for policy makers, they need more global tools. However, they have to know to know the tool, not use it. How can the consortium influence the political level?

- **HOW to convince?**
    - Focus on businesses who want to cooperate because they are willing to give their invoices and detailed information. The pitfall here is that energy is not the core business of companies, risk that they are not interested.
    - Ask very down to earth questions, e.g. is your boiler 50 years old. Consider the need for a questionnaire to get information about the current situation of the company buildings and infrastructure and installations.

- **WHAT data to collect?**
    - Consider the possibility to have a zero level for data input. The zero level is the known data for energy use at business park level – not individual business level. Proposition to make a rough estimate based on known data and to convince companies to give data for level 1.
    - Collect as much data as possible from invoices of companies or from energy distribution companies in order to limit the effort.

- **WHICH technologies to include?**
    - Deep geothermal energy systems are not feasible in West Flanders, but in other regions it can be used, e.g. deep geothermal (> 1000m) is applied in the Netherlands.
    - Wind turbines: large-scale turbines are better than smaller ones for the same effort. Eliminate the small turbines from the list, but keep the mid-scale for spatial reasons. Vertical wind turbines can be put on a house, but are not useful for companies.

- Consider the shortlist of technologies as an open system. This makes it possible to include other technologies in terms of changing boundary conditions or technological evolutions.

Workshop 2 | The BISEPS-tool: a conceptual outline

Presentation

Ambitions for the BISEPS-tool:

The BISEPS-tool will be a decision-support tool for the planning of sustainable distributed energy resource systems of business clusters. The tool will bring together demand- and supply-side data in order to calculate the optimal configuration of a business cluster's energy system, while taking into account all relevant LESTS boundary aspects.

Questions for the experts:

- Good idea to cluster, and if yes, on what basis?
- Good idea to work with a layered approach (= tool in multiple levels) because of expected discrepancy in information and detail in input level of targeted users?
- Does a mathematical optimisation model makes sense for the BISEPS-tool?
- Outputs: what are the needs of users & businesses? How technically in-depth? E.g. should dispatch strategy be provided for every day of year?
- USP of this tool will be the focus on the clustering. How to incorporate the synergies of energy clustering in the model? What are these synergies?

Feedback session: lessons learned

- The target group for the tool should be well defined, and companies need a good to incentive (pain vs pleasure). Financial motivation is not enough. This pain should be incorporated in the objective function.
- The tool should ideally be multi-levelled in order to meet the disparity in information and expectations of different users. In line with this, it would be interesting to allow for the use of standardized data.
- The use of synthetic profiles is not necessarily a good idea.
- The big challenge will be to incorporate the dynamic nature of all input (technology, prices, legal framework, policy, etc.). It should become a self-learning model if the model wants to stay useful in the future.
- Energy-efficiency measures on an individual business level should be identified in a first phase and taken into account in the rest of the tool's analysis. This will prevent system lock-in and enhance the output's robustness to changes in the companies' demand profiles.
- Use benchmarking as a starting point for your tool.

- The tool cannot assume clusters as a given, but must be able to identify matching businesses itself. In doing so, the tool should address the drivers for companies to cooperate in a clustered energy system. Focussing on the synergies of clustering is one of the tool's USPs.
- Another USP is the focus on LESTS boundary aspects, that often form barriers to implementation. The tool should identify these aspects, incorporate them as constraints in the mathematical model as much as possible and perhaps provide guidelines on how to address these barriers.
- Mathematical optimisation makes sense but the tool should avoid being overly prescriptive. It should be flexible enough to ensure outputs remain robust for exogenous changes such as fluctuation of resource prices, companies' expansion plans and changes in legislation.
- The best solutions does not exist, better to give a list of best options.
- The goal shouldn't be to develop overly technical models, but rather to direct where specialist efforts are best spent in a following phase. It should be oriented towards the business- and implementation-side of the spectrum.

Workshop 3 | Do's and don't's to support SME's (demand side)

Presentation

In the session following questions were discussed:

- "How to convince businesses to cooperate and jointly invest in renewables?" Do we start asking technical questions, or ask we how they feel this morning? Do we start talking about our sustainable energy packages, or ask we them about their dreams (business models)? Do we give him opportunities to cooperate with other SME's, or try to figure out who he/she trust in this matter?

- "How to unburden businesses towards realization of projects?" How can we serve a good breakfast for an SME or SME's, by a standardized approach or an individual approach? Give them an offer they can't refuse or do we give them something they really like?

Feed-back session: lessons learned

- The energy bill is not the main problem SME's face (these are low).

- SME's hardly know about energy – someone has to do the study work to see what the best solution is for a company. Difficult to find investors to do the study work.

- Achieve cooperation with ambassadors helps to convince businesses.

- Bring the solution to SME's, not ask for their problems.

- Cooperation between SME's requires trust, and trust requires good processes. Platform (business clustering) is important to get the companies to know and trust each other based on the challenge for the businesses (is energy a pain for the company?)

- 3rd party financers can look at the long term (e.g. ESCO's, http://www.vlaio.be/themas/esco-voor-kmo), SME's look at the short term.