



October 2020

## Newsletter #1: Concept development and definition

Dear reader,

This is the first newsletter, after the introductory version #0, of the Danish project for participation in the IEA Energy Storage Annex 35, supported by the Danish funding body, EUDP. The project has been ongoing for about one year, where two project meetings has taken place since the kick-off in Bad Tölz. The corona-situation has affected the work, where the project meetings have been held online, but the progress in of the work and the cooperation between partners have not been hindered, and the Annex is still expected to go as initially planned.

### Concept development and white paper

A white paper on flexible sector coupling (FSC) is developed as a part of Subtask 1 on concept development. This will cover the theoretical background and different aspects of FSC. The white paper will describe the common ground for the work with FSC in this annex as well as other relevant places. The focus is sector coupling applications where renewable based electricity is used to cover thermal or mobility demands with application of storage to make the sector coupling flexible and thereby increase the potential penetration of renewable electricity. The white paper will be published in connection with the Annex.

### Case examples of flexible sector coupling

In Subtask 2 on Storage technology and configurations in flexible sector coupling (FSC), case examples have been collected though distribution of a project template in the Annex network. The case examples will be categorized and analyzed systematically to uncover tendencies and possible new and future applications of FSC. This will form the basis for further analyses in Subtasks 3 and 4 on FSC in respectively Local and National energy system. Here the identified technologies and configuration will be analyzed in the integration of an energy system taking aspects such as temporal dynamics and economy into consideration.

### World Bank Group participation

The Annex 35 has participation of representatives from the World Bank Group, which shows a board interest in the topic of the Annex 35. The World Bank representative has presented some of their initiatives about renewable energy, energy storage and decarbonization in the context of developing countries but mentions that sector coupling is difficult due to several issues. Lack of capital for investments, economic instability and energy demands are low. However, demands are increasing and there are several reasons to focus more on renewable and efficient energy supply such as reduction of pollution, deforestation and job creation.

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*This project is supported by EUDP and managed by PlanEnergi with the purpose of delivering Danish contribution to the IEA ECES Annex 35.*

### **GW-scale P2X facility planned in Copenhagen**

A gigawatt-scale electrolysis plant is being planned and developed in Copenhagen by a consortium of several large energy companies and energy consumers. The plant will be developed in stages with 10 MW in 2023, 250 MW in 2027 and potentially 1.3 GW in 2030 when an offshore wind power capacity in the Baltic Sea has been fully deployed. This plant is an important demonstration and can be an important component in large-scale sector coupling and flexibility through storage of hydrogen, e.g. for production of electrofuels.

### **Kind regards**

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