

METADATA (*)

TOPIC A – Training Unit 2: Flexibility resources, services and products

Source

Partner: TAU

The training unit is developed for the Trineflex project (<https://trineflex.eu/>), HORIZON Innovation Actions, GA 101058174.

Sources Lesson 2 Industrial flexibility resources:

- R.A.F. Currie, G.W. Ault, C.E.T. Foote and J.R. McDonald, *Active power-flow management utilising operating margins for the increased connection of distributed generation*, IET Generation Transmission Distribution, Vol. 1, No. 1, January 2007, <https://doi.org/10.1049/iet-gtd:20060035>
- *Overview of frequency control in the Nordic power system*, <https://www.fingrid.fi/en/news/news/2022/overview-of-frequency-control-in-the-nordic-power-system-published/>

Project: TRINEFLEX - Transformation of energy intensive process industries through integration of energy, process, and feedstock flexibility, Grant agreement ID: 101058174

Ownership

Teams responsible for creating the content is TAU. From TAU, Mr. Sami Repo prepared the lessons for Flexibility resources, services and products.

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Abstract

The training unit will clarify the conceptual meaning of energy flexibility resource, service and product. Examples of resource, services and products are given to make them more concrete.

Structure

- Lesson 1: Flexibility definition
The general concept of energy flexibility and differentiate resources, services and products involved in the flexibility management
- Lesson 2: Industrial flexibility resources
Examples of flexibility resources in different industrial processes. The resource considered here is the primary process operated in a flexible way within the constraints defined by the operator to shift energy demand, clip peak demand, fill valley, etc.
- Lesson 3: Flexibility services
Highlights of common services like energy cost minimization, power peak cutting, frequency control, etc., and how service description may be defined in a technologically neutral way.

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- **Lesson 4: Flexibility products**

Flexibility product is an entity what may be traded or contracted. Both the explicit and the implicit products are explained and how these products might be utilized in different flexibility utilization cases. Examples of existing commercial flexibility products are also given

Learning Outcomes

After the training unit, the trainee will be able to differentiate flexibility resource, service and product and identify the basic principles of utilizing flexibility for different energy management functionalities.

Intended Audience

The training unit is intended for energy managers in industrial companies.

Pre-requisites

Energy / electrical engineering background would help to understand the details of the training unit.

Language: English**Format:** Video mp4, PDF**Expected workload**

Expected total workload is about 1 hour

(*) The structure of the Metadata for the Training Units derives from the training Metadata model developed within the Leonardo da Vinci project LINKVIT (2013-15, GA N. 2013-IT1-LEO05-04046)