



Chain activities overview

Report 2020

CO2P_Chain_activities overview

Chain analysis

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Document history

Version	Date	Author	Description
0.1	18-01-2017	F. Wuts	Initial version
1.1	22-02-2017	F. Wuts	Update based on info from various chain analysis
2.0	30-05-2017	F. Wuts	Update with respect to 2016 results
3.0	25-05-2018	M.K. van Eesteren	Update with respect to 2017 results
4.0	19-08-2019	M.K. van Eesteren	Update with respect to 2018 results
5.0	23-06-2020	P. Pershad	Update with respect to 2019 results
6.0	17-08-2020	P.P. Lamers	Final version 2019
6.1	08-07-2021	P.P. Lamers	Update 2020
7.0	16-07-2021	P.P. Lamers	Final version 2020

1. Introduction

This document gives an overview of chain activities for ICT Group N.V.

2. Inventory

<i>Start</i>	<i>End</i>	<i>Chain analysis</i>	<i>Status</i>
2016	2020	Loading poles (charging stations)	Completed
2017	2020	GridFlex Heeten	Completed: This project was completed in August 31th, 2020. Lessons learned published in September 2020
2020	->	TURNN	Being developed.
2020	->	TROEF	Being developed.
<i>Start</i>	<i>End</i>	<i>Chain initiatives/projects</i>	<i>Status</i>
2016	2020	Community flex BZO (ICT initiator)	Running: This project is expected to be completed on March 21 2020
2011	2015	Energy distribution	Completed
2014	2016	Energie koplopers	Completed
2018	2018	Energie koplopers phase II	Completed
2015	2021	USEF/SESP	Completed in 2021

2.1. Chain analysis

Loading poles (charging stations)

<i>Chain analysis</i>	<i>Description</i>
Title	Loading poles (charging stations)
Time frame	2016-2020
Participants / Partners	<ul style="list-style-type: none"> • GreenFlux • BOM (Brabantse Ontwikkelings Maatschappij) • ICT Group
Description	This cooperation between parties is a unique combination of knowledge about electricity transport, the energy domain and innovative IT solutions. The growing expectations of electric driving in West-Europe are enormous. Besides the growth in the number of electric vehicles, the expectations are that the battery capacity will increase what will result in an accelerated expansion in loading ability.
Documentation	<ul style="list-style-type: none"> • Chain analysis loading poles • Loading poles progress reports
References	<ul style="list-style-type: none"> • https://www.bom.nl/ • https://greenflux.nl/ • https://www.greenflux.com/

GridFlex Heeten

<i>Chain analysis</i>	<i>Description</i>
Title	GridFlex Heeten
Time frame	2017-2020
Participants / Partners	<ul style="list-style-type: none"> • ENEXIS Netbeheer • ENDONA • University of Twente • Enpuls • DrTen • Escozon • Buurkracht • ICT Group
Description	The Grid Flex Heeten project is focusing on an active energy community in the village Heeten. The village has an exemption for energy taxes to experiment with alternative energy propositions. The community will experiment with peer-to-peer supply and the use of batteries to adjust demand and supply. ICT will implement the Smart Energy Service Platform and will

	offer a control interface steering the batteries. An adjustment algorithm will be used to adjust the demand and supply, based on the locally produced solar energy.
Documentation	<ul style="list-style-type: none"> • Chain analysis GridFlex Heeten • Progress reports
References	<ul style="list-style-type: none"> • https://gridflex.nl/

2.2. Chain initiatives / projects

Chain initiative "Community Flex BZO"

This is a project with respect to the energy awareness in the small and medium-sized enterprises sector. A community in Groningen wants to create a local balance between the supply and demand of electricity, by using flexibility in production processes, heating, cooling and loading poles and adjust the local availability of sustainable ("green") energy. The aim of the project is to establish a business case as a response for small and medium-sized enterprises to see if a local energy balance is possible. ICT will use the Smart Energy Service Platform to create access to all machines and processes. Based on the data of these machines and processes, the Smart Energy Service Platform will form an adjustment strategy which is able to create the local electricity balance.

For further information refer to the chain analysis – Community Flex BZO document [3].

Result:

With this project "small" parts of flexibility of the industry park will be used. These small parts will be bundled and will cooperate with each other. This flexibility provides an "accommodation" for temporary surpluses of sustainable produced electricity. This will prevent investments by the electricity grid manager which will result in cost and energy savings.

Chain project “Energiekoplopers”

The project “Energiekoplopers Heerhugowaard” is a smart energy district of almost 200 households in which the energy consumption within the district is optimised.

The households have innovative equipment by which flexibility in energy demand and supply is present. The whole project is based on USEF. Heerhugowaard is the first pilot in which the USEF reference implementation is applicable. The consortium consists of Alliander, Essent, IBM, ICT, NRG031 and the municipal Heerhugowaard.

In 2017 phase 2 of the project is started. In this phase batteries were added in which locally produced electricity was stored and could be used during moments of peaks in the electricity demand. The project was officially completed in 2018 and in early 2019 the system was dismantled. The final report can be found on the following URL:

<https://www.liander.nl/sites/default/files/Eindrapportage%20EnergieKoplopers2.pdf> .

Result:

ICT is responsible for the IT infrastructure. The ICT Smart Energy Service Platform forms the basis for the IT-solution, so that access to smart meters and equipment in the houses, the collection and storage of data, and feedback by community through portals and apps is realised, refer also to <https://www.youtube.com/watch?v=2K7uQp6dfgE>



Chain project USEF/SESP

A consortium of seven Dutch companies on the energy market (among which ICT) has presented the Universal Smart Energy Framework (USEF) during the European Utility Week in Wien. USEF described a new market model which will enable trading in flexible energy use and will enable the companies in the energy system, to benefit from flexible production, storage and use of energy. USEF is set to be the international standard for smart energy systems. A standard is needed to speed up and connect the various initiatives, see also <https://www.usef.energy/>

The project is still running. However, our role changed from being an active governance partner into being hired to make the framework and conduct the pilots. The Foundation's focus is now shifting to facilitating standardization. More information can be found on <https://www.usef.energy/new-focus-new-leadership/>.

Results: In 2019 ICT worked on the USEF framework and in 2020 the new version will be published. The new framework is called: USEF Flexibility Trading Protocol (UFTP)

More information on this topic can be found on: <https://www.usef.energy/usef-flexibility-trading-protocol-specification/>.

ICT also contributed on a white paper called New white paper: Energy & Flexibility Services for Citizens Energy Communities. It can be found on: <https://www.usef.energy/new-white-paper-energy-flexibility-services-for-citizens-energy-communities/>



Sewage treatment (RWZI)

ICT Group is a large player in the replacement of sewage treatment installations. If sewage treatment installations are replaced, the process automation is revised which also contains the steering of sewage treatment installations. Efficient steering of sewage treatment can result in CO₂ reductions. The possible setup of a chain analysis with respect to sewage treatment would further be investigated in 2019. However, no progress was achieved in 2019.

Virtual Powerplant in Loenen

Virtual Powerplant in Loenen: project with 100 households that are controlled by solar panels, electric cars and heat pumps with the aim of using more self-generated electricity and thus achieving more CO₂ reduction.

URL for more information on the project:

- <https://duurzaamloenen.nl/project/>

This project is part of a larger project in which ICT started as a subcontractor in 2019. The project is conducted in different countries, whereas ICT will conduct the Dutch part of it. More information can be found on: <https://www.nweurope.eu/projects/project-search/cvpp-community-based-virtual-power-plant/>

Vlakplaattractiebatterijen for aFRR

Goal: to take over the overproduction of a solar park with a large battery and thereby support Tennet with production. The project preparations started in October 2019, but the project was scheduled to in 2020.

- URL for more information on the project:
- <https://projecten.topsectorenergie.nl/projecten/vlakplaattractiebatterijen-voor-afrr-33435>
- <https://www.tennet.eu/nl/nieuws/nieuws/euiggy-platform-biedt-europese-consumenten-toegang-tot-de-duurzame-energiemarkt-van-morgen/>

Congestion management at Stedin on basis of USEF (Zuidplaspolder)

In 2019 the preparations already started and in 2021 the project will start.

URL for more information on projects:

- <https://stedin.net/over-stedin/duurzaamheid-en-innovaties/een-flexibele-energiemarkt/zuidplaspolder>

- <https://www.stedin.net/over-stedin/pers-en-media/persberichten/stedin-zoekt-ondernemers-in-de-zuidplaspolder-voor-flexibel-energiegebruik>
- <https://www.tennet.eu/nl/ons-hoogspanningsnet/onshore-projecten-nederland/station-zuidplaspolder/>

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