Chain activities overview

Sustainability report

on behalf of ICT Group

CO2 Chain activities overview
Sustainability report
Version: 9.0

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Document information

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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
7.1	26-01-2022	P.P. Lamers	Update 2021
8.0	02-03-2022	P.P. Lamers	Final version 2021
8.1	10-05-2023	P.P. Lamers	Update
8.2	13-06-2024	M. Vrisekoop	Update
9.0	01-07-2024	M. Vrisekoop	Final version

1. Introduction

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

2. Inventory

Start	*End*	*Chain analysis*	*Status*
2023	->	Employee Commuting	Active
2023	->	Smart Supply Chain	Active
2020	2022	TROEF	Completed
2020	2022	TURNN	Completed
2017	2020	GridFlex Heeten	Completed
2016	2020	Loading poles (charging stations)	Completed
Start	*End*	*Chain initiatives/projects*	*Status*
2019	-	Goingdutch	Active
2016	2020	Community flex BZO (ICT initiator)	Completed
2015	2021	USEF/SESP	Completed
2018	2018	Energie koplopers phase II	Completed
2014	2016	Energie koplopers	Completed
2011	2015	Energy distribution	Completed

2.1. Chain analysis

2.1.1. Smart Supply Chain

Chain analysis	*Descripion*
Title	Smart Supply Chain
Time frame	Ongoing
Participants / Partners	Data providers, Yellowstar, clients, users, logistic partners, network and server providers
Description	Star Flow Supply Chain (SFSC) is a value chain collaboration product. By providing 24/7 insight into the process from order management up until delivery, the supply chain becomes transparent and predictable; allowing efficient management and rapid handling of incidents. By connecting value chain parties, SFSC aims to provide faster, cheaper and more sustainable logistics solutions. Different transportation scenarios are evaluated and measured on the bases of speed, costs and their respective carbon footprints. This functionality allows users to select a transportation scenario with desirable characteristics, depending on their needs. A low carbon logistics process can easily be identified and selected. Due to its transparent nature, this feature has the potential to reduce significant amounts of CO_2 in the value chains of SFSC users.
Documentation	4.A.1. & 4.B.1 Value Chain Analysis Smart Supply Chain
References	• https://www.yellowstar.com/en/logistics-software/star-flow-transport-planning/ • https://www.yellowstar.com/en/news/sustainability-will-be-the-trigger-for-supply-chain-collaboration/

2.1.2. Employee Commuting

Chain analysis	*Descripion*
Title	Employee Commuting
Time frame	Ongoing
Participants / Partners	Employee commuting of the Dutch workforce within ICT Group, Leasing Companies, Public transport providers, fuel and energy suppliers, manufacturers, other suppliers.
Description	For this analysis, the chain of employee commuting is considered, with an emphasis on the transportation movements (use phase), because this part of the chain falls directly under ICT Group's scope of influence and represents therefore the biggest potential

	for CO_2 reduction. Employee commuting accounts for 14% of ICT Group's total greenhouse gas emissions. Data about employee commuting will be gathered directly from ICT Group and available carbon emission data in the Carbon Manager. When possible, primary data was collected and where necessary, supplemented with secondary data. Data used for the analysis will be updated in the future through an employee survey that is representative for ICTs entire Dutch workforce.
Documentation	4.A.1. & 4.B.1 Value Chain Analysis Employee Commuting
References	

2.1.3. TURNN

Chain analysis	***Descripion***
Title	TURNN
Time frame	2020-2022
Participants / Partners	Development • TURNN (ICT Group) Distribution and storage • Servers at Microsoft, Amazon & Cloud VPS Clients, such as • ASML, Brainport Eindhoven, Municipality of Eindhoven, KEOLIS, Qbuzz and Travel electric. • Users of the app. Data providers, such as • InTraffic for public transport data.
Description	Turnn helps to reduce mobility emissions. It is mainly used by companies, public transport organizations and (local) governments to achieve their mobility goals. As the organizations that use Turnn increase rapidly, Turnn is growing from a start-up that started two years ago to a scale-up. Turnn consists of a user app, company portal, and administrative portal.
Documentation	• Chain analysis TURNN • Progress reports
References	• https://turnn.nl/

2.1.4. TROEF

Chain analysis	*Descripion*
Title	TROEF: Layered Energy System (LES) for TROEF
Time frame	2020-2022
Participants / Partners	TROEF consortium • AM • BAM • Entrnce International Holding • KPN • OrangeNXT (ICT Group) • Stedin Netbeheer • Stichting Hogeschool Utrecht • NEN • Technische Universiteit Eindhoven • Tymlez
Description	The topic of the value chain analysis is the Layered Energy System (LES) for utility buildings that ICT Group will develop in the context of the TROEF consortium. This builds on the existing product EnergyNXT, but will be expanded with additional functionalities. Data from the use of EnergyNXT can be used to make assumptions for the effect of LES, until direct data from the deployment of LES has been gathered.
Documentation	• Chain analysis TROEF • Progress reports
References	• https://www.troef-energy.nl/ • https://orangenxt.com/

2.1.5. GridFlex Heeten

Chain analysis	*Descripion*
Title	GridFlex Heeten
Time frame	2017-2020
Participants / Partners	• 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	• Chain analysis GridFlex Heeten • Progress reports
References	• https://gridflex.nl/

2.1.6. Loading poles (charging stations)

Chain analysis	***Descripion***
Title	Loading poles (charging stations)
Time frame	2016-2020
Participants / Partners	• GreenFlux • BOM (Brabantse Ontwikkelings Maatschappij) • ICT Group
Description	This cooperation between parties is an unique combination of knowledge about electricity transport, the energy domain and innovative IT solutions. The grow expectations of electric driving in West-Europe are enormous. Beside 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	• Chain analysis loading poles • Loading poles progress reports
References	• https://www.bom.nl/ • https://www.greenflux.com/

2.2. Chain initiatives / projects

2.2.1. goinGDutch

goinGDutch emerged from an ideology centred on building on The Future Of Cycling, but which recognised that the challenges presented by urbanisation and mobility are too complex to be solved by one party alone.
Through this initiative, under the auspices of the Ministry of Infrastructure & Water Management, companies BAM Infra, Schiphol, Microsoft and OrangeNXT (now part of ICT Netherlands B.V.) have joined forces, working as partners to benefit governments, businesses and end users. In the past, we would all provide our own separate pieces of the puzzle, but now we focus on the end result together, working on new concepts and services that place end users front and centre.

More information:

- https://goingdutch.bike/en/
- https://togetherwecycle.eu/

Social:

- https://www.linkedin.com/company/goingdutch/

Selection of activities:

Year	Activities
2024	• https://www.dewoudenberger.nl/lokaal/mensen/1021947/bijeenkomst-over-veilig-fietsen-rechtvaardige-straten-in-woud#closemodal • BAM: https://www.dewoudenberger.nl/lokaal/mensen/1021947/bijeenkomst-over-veilig-fietsen-rechtvaardige-straten-in-woud#closemodal • https://www.linkedin.com/posts/activity-7084105316891549696-Eg8a?utm_source=share&utm_medium=member_desktop
2023	• BAM: https://greenbusinessclub.nl/zaanstad/2023/07/12/goingdutch-nieuwe-participant-van-green-business-club-zaanstad/ • https://www.linkedin.com/posts/camielbos_schiphol-en-hely-starten-nieuw-deelfietsprogramma-activity-7084510800496717824-wXLB?utm_source=share&utm_medium=member_desktop • https://www.linkedin.com/posts/europa-in-vlaams-brabant_stargategreendeal-stargate-fietsen-activity-7080105745744060416-pUmc?utm_source=share&utm_medium=member_desktop
2022	• Schiphol: https://grootschipholbereikbaar.nl/acties/goingdutch-support-tools/
2021	• Vervoerregio Amsterdam: https://vervoerregio.nl/artikel/20210913-social-ride-op-de-fiets-in-de-schipholregio • Area30: https://goingdutch.bike/area30/

	• Start of pilot inventory of traffic safety cycle paths: https://goingdutch.bike/start-pilot-inventarisatie-verkeersveiligheid-fietspaden/
2020	• Speed bike safe in crowded areas thanks to speed regulation: https://goingdutch.bike/613-2/ • Building the cycling-community of the future: https://goingdutch.bike/goingdutch-vergroot-bereikbaarheid-en-mobiliteit-rondom-steden-en-luchthavens-met-slimme-mobiliteit-en-interactieve-fietsroutes/
2019	• Start of goinGDutch by secretary of state Stientje van Veldhoven: https://www.youtube.com/watch?v=WHUAzUyWnng

2.2.2. 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 initiative – Eindrapport BZO Community Flex, 2020-08-28.

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.

Reference:
- Website: https://projecten.topsectorenergie.nl/projecten/community-flex-bedrijvenpark-zuidoost-bzo-27703

2.2.3. 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

References:

- https://www.youtube.com/watch?v=2K7uQp6dfgE

2.2.4. Chain project USEF/SESP

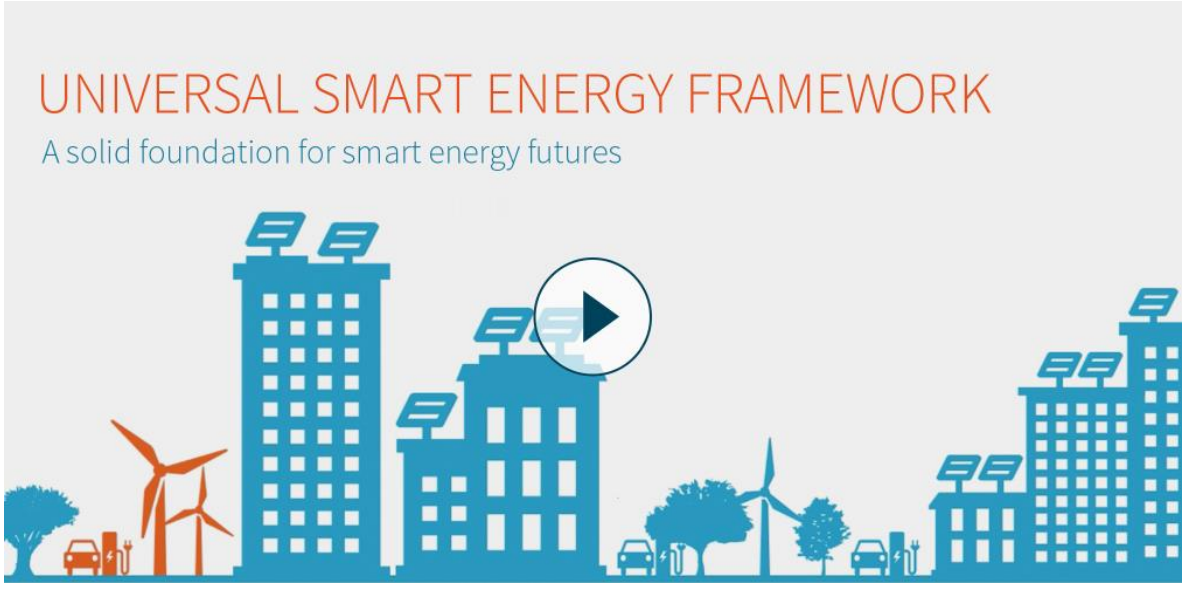
A consortium of seven Dutch companies on the energy market (among which ICT) has presented the Universal Smart Energy Framework (USEF) during the European Utility Week in Wien. USEF described a new market model which will enable trading in flexible energy use and will enable the companies in the energy 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/



2.2.5. 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://loenenenergie.nl/kijk-hier-het-webinar-van-de-centrale/

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.

2.2.6. 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 start in 2020.
Partners: Centurion Exploitatie B.V., Time Shift B.V., Dexter Energy Services B.V., GREENER. power solutions B.V., Escozon Coöperatie U.A., Energie Coöperatie Endona U.A.

URL for more information on the project (ref DEI4819010):

- https://projecten.topsectorenergie.nl/projecten/vlakplaattractiebatterijen-voor-afrr-33435
- https://netztransparenz.tennet.eu/nl/tinyurl-storage/nieuws/equigy-platform-biedt-europese-consumenten-toegang-tot-de-duurzame-energiemarkt-van-morgen/

2.2.7. 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://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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