Progress CO_2 reduction in the chain 2018

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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

References

Ref #	Version	Date	Author	Description
1	3.0	10-04-2018	M.K. van Eesteren	Chain analysis loading poles
2	3.0	22-05-2018	M.K. van Eesteren	Chain analysis Hosting
3	2.1	23-04-2018	M.K. van Eesteren	Community Flex BZO
4	2.0	06-06-2018	M.K. van Eesteren / M. Luttmer (Luttmer consulting)/ M. Segers (Luttmer consulting	Grid Flex Heeten

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1 Introduction: Description ICT Group N.V.

ICT Group N.V. (ICT) is a leading industrial technology solutions and services providers offering high quality technological solutions in the information and communication technology areas within various functional domains, especially within Automotive, Logistics, Machine & Systems, Industrial Automation, Energy and Healthcare. ICT is active within the Netherlands, Belgium, France, Bulgaria and the United States.

The ICT solutions offered to clients involve software development, solutions on project basis, the secondment of experienced and highly educated staff as well as services to maintain IT systems.

ICT wants to keep at least level 4 of the CO_2 performance ladder. The CO_2 reduction policies are only applicable on the organizational boundary set in the boundary assessment document.

Since 2011 ICT has arranged his CO_2 reduction policies on the level of ICT Automatisering B.V. which is one of ICT Group N.V.'s subsidiaries. Starting from 2017 ICT wants to arrange his CO_2 reduction policies on ICT Group N.V. level. Based on this ambition we have chosen to use 2016 as a basic year for measuring the CO_2 emissions on ICT Group N.V. level.

On ICT Group N.V. level we have defined sustainable development goals which are included in our Annual Report 2017.

1.1 Organizational Boundary

The organizational boundary of ICT Group N.V. is described in the organizational boundary 2017 document. In this document we base the organizational boundary on the financial control we have from an ICT Group N.V. in a legal entity within the group.

1.2 Responsibles

The end responsible for the sustainability reporting within ICT Group N.V. is the Chief Financial Officer (CFO).

1.3 Base year

The base year of ICT Group N.V. is 2016. Until 2016 the base year was 2011 with respect to ICT Automatisering Nederland B.V.. The base year has changed as the organizational boundary changed from ICT Automatisering Nederland B.V. as stand-alone company to ICT Group N.V.

With respect to the base year, High Tech Solutions B.V. which is part of the ICT Group N.V. organizational boundary starting from 1 June 2017, is added for comparison purposes. This is reflected in the CO_2 progress report 2017 for ICT Group N.V..

In 2018 NedMobiel B.V. is added as part of the ICT Group N.V. boundary starting from 1 January 2018. This is reflected in the CO_2 progress report 2018 for ICT Group N.V..

The planning period for taking CO_2 reduction measures is 2017 until 2020. For the CO_2 reduction measures see the CO_2 reduction plan 2017-2020 of ICT Group N.V..

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2 Inventory

Start	*End*	*Chain analysis*	*Status*
2016	-	Chain analysis – loading poles	Running
2017	2020	Grid Flex Heeten (GFH)	Running
		Chain initiative	
2016	2019	Community flex BZO (ICT initiator)	Pilot project is currently on hold as one of the key participants has withdrawn.
		Chain projects	
2011	2015	Energy distribution	Project ended by the end 2015
2014	2016	"Energie koplopers"	Project ended by the end 2016
2018	2018	"Energie koplopers phase II"	Running
2015	-	USEF/SESP	Running

2.1 Chain analysis "loading poles"

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 grow in the number of electric vehicles the expectations are that the battery capacity will increase what result in an accelerated grew in loading ability. For more information refer to the chain analysis document [1].

Result:
The cooperation with GreenFlux gives an indication of the electricity consumption of electric vehicles in relation to the fuel consumption of cars and the CO_2 reduction coming from the use of electric vehicles instead of conventional vehicles.

2.2 Grid Flex Heeten (GFH)

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. The project has financial support from the Dutch government and a running time of 4 years [4].

Result:
The project will result to a common business case for a sustainable energy system, a set of innovative price mechanism for local energy markets, a local energy market in Heeten in which price mechanisms, local energy production and storage are matched and an insight in the possibilities and consequences of lower peak loads and regulations.

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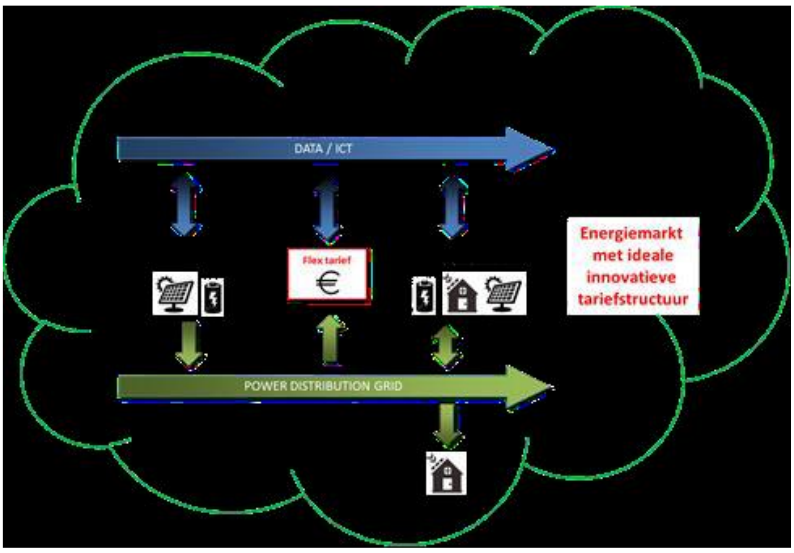

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3 Chain initiatives

3.1 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 with the use of 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 setup a business case as a response for small and medium-sized enterprises 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 [3].

Result:
With this project “small” pieces of flexibility on the industry park will be used. This small pieces will be bundled and 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 result in cost and energy savings.

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4 Chain analysis

4.1 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 are added in which locally produced electricity is stored and are used during moments of peaks in the electricity demand.

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

4.2 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 must be the international standard for smart energy systems. A standard is needed to speed up and connect the various initiatives, see also http://www.usef.info/

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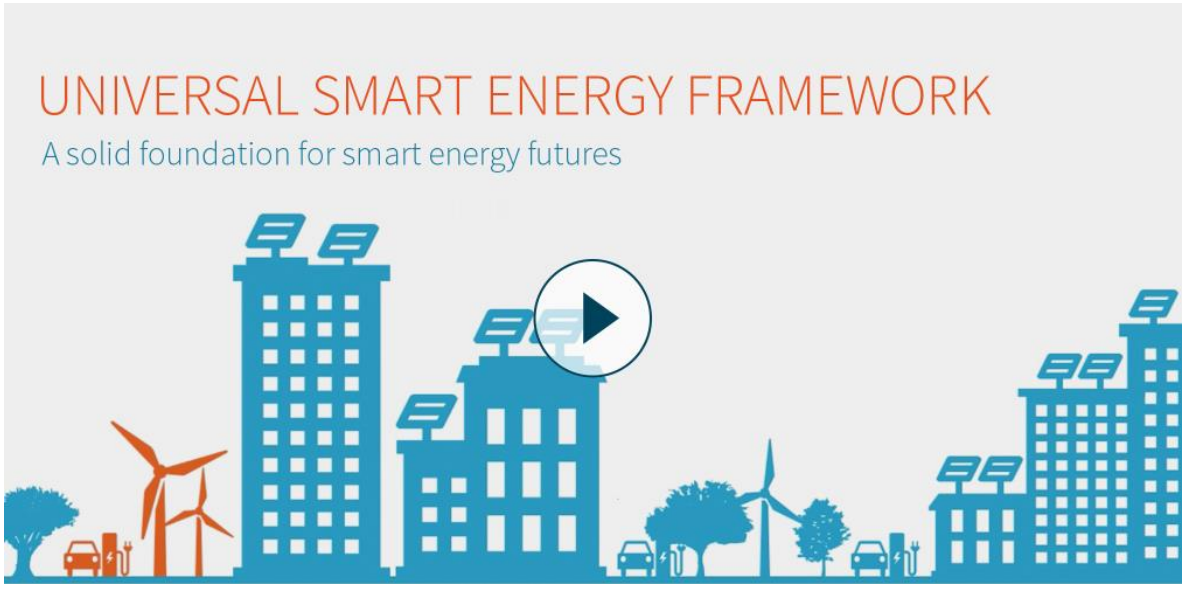

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5 Progress chain analyses

With regard to CO_2 reduction in the chain ICT has reached the set goals. For next years various initiatives will picked up to contribute further. The following links show which initiatives ICT unfolds with respect energy reduction.

Avoiding peak times on the power grid: https://ict.eu/case/spitsmijden-op-het-elektriciteitsnet-2/
This can avoid investments in reinforce power grids.

Greenflux infrastrure for loading poles in the Netherlands: https://ict.eu/case/greenflux-service-operations-platform/

USEF: https://ict.eu/nl/markten/energie/usef/

5.1 Progress chain analysis 'loading poles'

The chain analysis is updated with the 2017 results with regard to kWh consumption and the related CO_2 reduction. For further detail see the chain analysis 'loading poles' document.

CO_2 reduction in tons reduction in CO_2				
Year	2016	2017	2018	2019
Estimated CO_2-emission fossil fuel	1.175,8	3.517,7	7.319,8	
Percentage relative to fossil fuel (including production and recycling)	30%	35%	40%	45%
CO_2 emission (including production and recycling)	823,1	2.286,5	4,391,9	
Reduction	352,7	1.231,2	2.927,9	

5.2 Progress chain initiative "Cummunity Flex BZO"

During 2018 the 70 households of GridFlex Heeten are connected as local energy network. This means that based on the theoretical CO_2 reduction as calculated in previous paragraph a CO_2 reduction of 104 kg CO_2 kg is realised.

The role out of the salt sea battery is delayed. The GridFlex Heeten consortium has decided to put this on a side track and to move on with other parts of the traject. As the batteries are not physically in place the University of Twente has projected the behaviour of batteries based on a simulation as if the batteries were in place. Furthermore, the consortium is looking for another battery supplies.

Another part of the project contains the adjustment of household energy usage to the status of the local network. This by avoiding peaks on the energy network so that the energy network can be used more efficient. This prevents grid reinforcements and aging. For that Enexis introduced a dynamic net work electricity rate and ICT has extended the Gridflex Heeten with the dynamic electricity rate including a 24 hours prediction. Based on this app the GridFlex Heeten households can decide when they want to use energy and unburden the energy network.

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6 Possible new chain analysis

6.1 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 results in CO_2 reductions. The possible setup of a chain analysis with respect to sewage treatment will be further investigated in 2019.

6.2 Investigation possible new chain analysis

In 2019 an investigation of possible new chain analysis will be started to consider in which chains it is likely that we are able to show CO_2 reduction based on the services / products we deliver and/or purchase.

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7 Comparison Chain Analysis with competitors

As part our CO_2 policy and to investigate possible new chain analyses we have analysed which chain analysis and reduction goals our competitors have.

Competitor	Description chain analysis	Reduction targets
Ordina	1. Process professional services – stimulating train traffic and reducing commuting traffic 2. Process projects – reducing CO_2 by clients by projects 3. Process service – retain electricity usage reduction and stimulate use of green electricity	Unknown for scope 3 and chain analyses. Overall target 8% CO_2 reduction per FTE over the period 2017 – 2020
CGI	1. Reducing commuting traffic 2. Outsourced datacenters	1. 15% reduction of all car travel containing business and commuting travel. 2. Conform targets of MJA3 plan for IT sector.
Sogeti	1. Purchased goods and services. 2. Purchased capital goods. 3. Production waste	Overall reduction targets 2% CO_2 reduction per year.

Based on the chain analysis of our competitors we noticed that on an overall level the chain analysis are focused on internally scope 3 emissions like reducing commuting traffic and stimulating the use of train traffic and are focused on outsourcing datacenters.

With regard to the outsourced datacenters ICT had a chain analysis until 2016.

Therefore, we conclude that our chain analysis are more specific and externally focused. With regard to the reduction targets, 2% per year CO_2 reduction per FTE we notice that the ICT reduction target (2% CO_2 reduction per year per FTE) is in line with the reduction targets of our competitor.

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8 Conclusion

In 2016 the GreenFlux chain analysis is setup which shows well results with regard to CO_2 reductions. This also counts for the Hosting chain analysis.

A new chain analysis is prepared regarding the GridFlex Heeten, from which is the first results with regard to CO_2 reductions are expected in 2018.

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9 Authorisation

	paraaf	datum
Mark van Eesteren – Financial Controller & Sustainability Officer		06-06-2018
Jan-Willem Wienbelt – Chief Financial Officer		06-06-2018

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Appendix A Cloud projects

Subscription Name
Ampelmann
ASML_CIDT
Azure POC
BDR Thermea Managed Cloud Services
Bosch AVInfra ontwikkelomgeving
CC Microsoft
CC Microsoft Logistic
CC Microsoft PROD
CCU-BackEnd
Cloud Groningen
CloudSolutions
ContiwebTest
Data Lake
Energy Kibana Monitoring
Geas Development
Geas Production
Greenflux ACC
Greenflux DEV
Greenflux PROD
GSOP Eneco Acceptance
GSOP Eneco Production
GSOP Performance
HHW Productie
HHW USEF koppeling met de proeftuin
Hytech Support
IQS_Achievements
LineInsights Development
Lloyds SmartFleet
Omron
Prodecis
RadiomiX
Remeha BDR Connect
Remeha BDR Connect Phase 2
Remeha Connect Acceptance
Remeha Predictive Maintenance
RWS-EA-hosting
SHERPA RWS-WMS
StorSimple
svpbwdashboard
Tegnis Cloud Dev
Tobania Resume Tool
USEF as a Service
USEF Build
Usef Wildlands
Visual Studio Online
Waterschap Limburg
Zuivelhoeve

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