



CO2 Sector initiatives

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History

Version	Date	Author	Description
0.1	27-07-2012	Hans van den Hoven	Initial version
0.2	02-08-2012	Frits Wuts	Adjustments Frits Wuts
0.3	03-08-2012	Frits Wuts	Remarks Hans van den Hoven
0.4	17-08-2012	Frits Wuts	Remarks related to Sacha Tensen (BECO)
0.5	22-08-2012	Frits Wuts	Processed remarks initial audit
1.0	23-08-2012	Frits Wuts	Final version
1.1	17-09-2012	Frits Wuts	Deleted names
2.0	24-08-2014	Frits Wuts	Update initiatives
2.1	07-07-2015	Frits Wuts	Update based on SGS audit
2.2	27-08-2015	Frits Wuts	Update related applications test and external expert SKAO
2.3	19-05-2016	Frits Wuts	2016 update
2.4	05-07-2017	Frits Wuts	Update based on SGS audit
3.0	26-03-2018	Mark van Eesteren	Update to ICT Group N.V. level
3.1	28-03-2018	Mark van Eesteren	Process review changes F. Wuts
3.2	15-05-2018	Mark van Eesteren	Process changes MJA3 covenant ICT-sector
4.0	22-07-2019	Mark van Eesteren	2018 update
4.1	30-07-2020	Priya Pershad	2019 update
5.0	07-08-2020	Peter Lamers	2019 final version
5.1	14-07-2021	Peter Lamers	2020 update
5.2	15-07-2021	Peter Lamers	New branding
6.0	16-07-2021	Peter Lamers	2020 final version

1. Road map ICT 2030

In the road map ICT 2030¹ version 1.1 from May 2012 (ICT-Office, ministry of economic affairs and Atos Consulting) the conclusion is formed that the following energy reductions and their CO₂ emissions are important in the future:

- The already installed capacity can be used better by making use of techniques like virtualisation, cloud computing, data deduplicating and thin provisioning. Data centres will search for measures to further improve their energy management. Additionally, there are possibilities to re-use residual heat of data centres and the connection to Smart Grids, so that saving of data can be placed at the location where the energy is the cheapest.
- The development of more efficient hardware, ICT components and network will make ICT applications energy efficient. Also, energy efficient software will add to energy efficiency. The development of energy efficient applications can be picked up by the ICT industry.
- Stimulate 'the new way of working' to reduce the number of business travel kilometres.

Based on the multi-year plan "MJA3 ICT-sector" 2017-2020 it is recorded that already in 2015, the ICT-sector has achieved the energy reduction goals for 2020 as set in the MJA3-covenant. For the period 2017-2020 the ambition is reduced by 3,3 PJ. ICT Group N.V. does not participate in the MJA3 covenant, but is in close contact with the ICT Nederland branch organisation who is pulling the MJA3-covenant.

The MJA3 ends on December 31st, 2020. It's not yet clear what happens next. Industry associations are discussing with the Ministry of Economic Affairs a Climate on future plan. ICT monitors any new developments on this subject, in order to incorporate this in ICT Group reduction plans, when necessary.

The update of the road map 2030 and related CO₂ reduction targets in the future, will depend on the current investigation what is needed to obtain level 5 of the CO₂ performance ladder on ICT Group N.V. level.

¹ Routekaart ICT 2030 https://www.nldigital.nl/wp-content/uploads/2013/01/Routekaart_ICT_2030.pdf

2. Participation in social initiatives

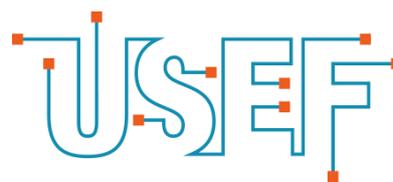
ICT Group (“ICT”) is participating in various initiatives within the sector and the environment to reduce the energy consumption and CO₂ emission.

Besides a contribution in hours, there’s budget for the costs of these initiatives. On a yearly basis ICT investigates which social initiatives are available to comparable companies, what will contribute to reduce CO₂ emissions.

The participation in social initiatives to reduce CO₂ emissions is discussed with ICT’s management team on a yearly basis. In the next paragraph a list of initiatives in which ICT already participates, is recorded.

2.1. USEF/EnergieKoplopers (intelligent energy networks)

ICT is an important initiator of developing, realising and supporting the ICT for Smart Grids in the Netherlands. For example, ICT is one of the founders of the USEF foundation, together with other key players active across the smart energy chain: ABB, Alliander, DNV GL, Essent, IBM and Stedin.



The Universal Smart Energy Framework (USEF) sets the international common standard for a unified smart energy market, connecting projects and technologies at the lowest cost possible. With a value-to-all approach, USEF enables the commoditisation and trading of flexible energy use. The framework defines the market structure, stakeholders’ roles, how they interact and how they benefit doing so. The USEF foundation was founded to accelerate the transition to a commercially viable smart energy system.

The ‘EnergieKoplopers’ project in the Dutch town of Heerhugowaard tested a USEF flexibility market for the first time. To this end, smart appliances were installed in 203 homes, to enable flexibility electricity consumption. The smart appliances were automatically controlled by a smart ICT system. The project has shown that the USEF flexibility market works: the system helps resolve future problems in the energy system and creates value for all the parties that play a role in a USEF flexibility market.

For more information see:

- <https://www.usef.energy/>
- <https://www.usef.energy/partners/>

2.2. GridFlex Heeten

In the village of Heeten in the province of Overijssel, ICT and several partners launched a pilot for GridFlex in December 2017. The aim is to create a local and sustainable energy market for the

consumption, storage and trading of solar energy. To make this possible, salt batteries are being used to store the renewable energy. ICT developed the energy management system. With respect to GridFlex Heeten, we have setup a chain analysis to reflect on the future CO₂ reductions.



References:

- <https://gridflex.nl/>

2.3. Smart Charging (GreenFlux)

ICT and GreenFlux are working together on Smart Charging.

Smart Charging is a smart and safe charging system that consists of charging points, a backend system in the cloud and reliable communication between the charging points and the cloud system.

ICT is realising the design, build and operational support for the GreenFlux Service and Operations Platform which is used for the setup and support of the loading poles network. Additionally, ICT is realising the MyGreenFlux portal for the mobile electric driver.



For more information, see:

- 2015, ICT and Brabantse Ontwikkelings Maatschappij (BOM) acquire stake in GreenFlux, <http://ict.eu/2015/ict-brabantse-ontwikkelings-maatschappij-bom-acquire-stake-in-greenflux/>
- 2016, GreenFlux Smart Charging Controller wins sMove360° Award at eCarTec in Munich, <https://ict.eu/2016/greenflux-smart-charging-controller-wins-smove360-award-ecartec-munich/>
- 2017, Transform data into action-oriented information, <https://ict.eu/blog/transform-data-action-oriented-information/>
- 2018, Eneco Group and SET Ventures invest in GreenFlux, <https://ict.eu/2018/eneco-group-and-set-ventures-invest-in-greenflux/>
- 2020, ICT Group N.V. Annual report 2020, <https://ict.eu/annualreport/>
- GreenFlux, <https://www.greenflux.com/about-us/investors/>

2.4. Hosting

Under the title 'hosting' ICT offers her knowledge and experience with Cloud Computing over the whole spectrum from IaaS (Infrastructure as a Service), PaaS (Platform as a Server) to SaaS (Software as a Service) on, among other things, the Windows Azure Cloud platform. This software hosting technology is already used in a number of projects and in the future the use will be further expanded. Additionally, the service will be extended with support services to be able to serve the customers more broadly and deeply.

An important part of this Cloud Sourcing proposition is the offering of a total ‘green’ package. The energy reduction compared to a traditional on-premise solution is considerably. For more information on this initiative, refer to <https://ict.eu/digital-transformation/cloud/>.

2.5. Connekt

This is the independent network for smart, sustainable and social mobility. A healthy mix of knowledge, creativity and vigour in which influential partners are coming together. With more than 200 partners all over the world we create and realise tangible solutions for a more sustainable and economic better world.

Participation via InTraffic.

Contact information: <https://www.connekt.nl/home/>

Aspects: CO2-reduction related to mobility.

2.6. TURNN

TURNN is also involved in various project collaborating with National- and Reginal governments. Like: Mobility as a Service Pilots (MaaS). Seven regional pilots were executed by the Ministry of Infrastructure and Water Management (see: <https://www.rijksoverheid.nl/documenten/brochures/2018/06/25/mobilty-as-a-service---regionale-pilots>).

TURN participates in projects:

- MaaS pilot Eindhoven: “Sustainability”;
Project “Sustainable Mobility Brainport Eindhoven”. Participation with: Municipality of Eindhoven, ASML and Brainport Development. See: <https://turnn.nl/actueel/maas-pilot-helpt-brainport-eindhoven-duurzaam-bereikbaar-te-houden/>
- MaaS pilot Limburg: “Borderless mobility Limburg”
Project “Borderless Mobility”. Participation with: Arriva. See: <https://turnn.nl/actueel/ict-group-en-arriva-zetten-volgende-stap-in-mobility-as-a-service-met-via-go/>

In addition to the pilots, TURNN also will supply the MaaS platform for the 10 year concession in northern regions Groningen and Drenthe, together with bus transport company Qbuzz. See: <https://turnn.nl/actueel/nieuws-1/>

2.7. Congresses

Participation in various congresses, for example:

Event	Description	References
Vakbeurs Energie 2019 8-10 October 2019	<i>Only available in Dutch</i> ICT Group is aanwezig op de Vakbeurs Energie. Deze beurs is hét live B2B platform gericht op duurzame energieopwekking en energiebesparing. Het is een platform boordevol innovaties, lezingen, live demonstraties en waardevolle contacten.	<ul style="list-style-type: none"> • https://ict.eu/2019/vakbeurs-energie-2019/ • https://www.vakbeursenergie.nl/nl/
Smart Industry event, 14 November 2019	On Thursday 14 November 2019, ICT Group organised the Smart Industry event in Maarsse, The Netherlands. The event focused on the interaction between experts, colleagues, professionals, business relations and (fellow) service providers. There were informative presentations from Microsoft, NS Treinmodernisering, Schneider Electric, Hutchison Ports ECT Rotterdam, DSM, Oasen and Van Oord Ship Management B.V. During the networking intervals and meetings on the conference floor, visitors could watch demos of Wonderware, Cimpro, ABB, Raster, OrangeNXT, Siemens, Microsoft, ICT Group, OSIsoft and AspenTech.	<ul style="list-style-type: none"> • https://ict.eu/video/aftermovie-smart-industry-event-2019/
Webinar ITxPT: Digital standard for public transport accelerates innovation 27 May 2020	On Wednesday, May 27, NIB organized an online conference ahead of the congresses ‘Dag van de Rail’ and Mobility FFWD on December 7, 2020. As part of this, InTraffic hosted the “Webinar ITxPT:	<ul style="list-style-type: none"> • https://ict.eu/webinar/webinar-itxpt-intraffic/

Event	Description	References
	digital standard for Public Transport accelerates innovation.	
Webinar Water Congress 2020 8 October 2020	In 2020, ICT Group again organized the leading Water Congress. Because the guidelines of the RIVM with regard to the Corona virus were maintained, no physical Water Congress was organized. Therefore, on Thursday 8. October, ICT organized a Webinar in which Process Automation of Wastewater, Surface Water and Drinking Water was the central theme.	<ul style="list-style-type: none"> • https://ict.eu/webinar/open-ame-webinar-water-congres-2020/
Webinar: Gebruik van (back-up) batterijen om te vergroenen. OrangeNXT 1 October 2020	<p>For the energy transition, it is important to properly coordinate supply and demand. A battery can support this process in order to use a surplus of green power at a later date and/or to smooth out peaks. Batteries are already regularly used for this purpose. EnergyNXT is used in a number of these applications: Lithium batteries for smoothing peaks and storing self-generated energy, sea salt batteries in a community of households, and an improved type of lead-acid batteries for balancing the grid.</p> <p>KPN, in cooperation with various companies in the energy sector, has started a study into how the back-up batteries in telephone exchanges can be used in the event of a shortage or</p>	<ul style="list-style-type: none"> • https://orangenxt.com/nl/over-ons/newsroom/ • https://www.youtube.com/watch?v=o4hICd4ht6U&t=40s

Event	Description	References
	surplus of green energy. EnergyNXT is being used in this project.	

3. Initiatives in which participating will be considered

As ICT believes, it is important to participate in initiatives which suits us as well and in which we can successfully contribute we investigate and consider participating in the following initiatives.

3.1. Nederland CO2 Neutraal

Nederland CO2 Neutraal organizes various congresses. During these congresses practical and concrete tips are provided with respect to CO₂ reduction possibilities.

For more information about this initiative, refer to: <http://nlco2neutraal.nl/>

3.2. NLdigital

NLdigital² is a branch organization for the IT, Telecom and Internet companies. Within NLdigital initiatives are taken, based on the long-term agreement (MJA) for energy reduction. Examples of these initiatives are the Smartgrids, based on the road map ICT 2030.

In 2018 NLdigital has agreed with the Secretary of State of economic affairs to enter a long-term agreement (MJA) energy efficiency. The long-term agreement offers ICT companies a voluntary, but not an opportunity without obligations to reduce their energy consumption. Attendees to the long-term agreement can reduce their energy consumption in two ways: improve their own energy efficiency and develop and use innovative ICT solution in other sectors.

ICT companies who participate in the long-term agreement, make an effort to improve their energy efficiency with 2% on a yearly basis. In 2020 an improvement of 30% compared 2005 must be realised. To support the energy efficiency goals the foundation 'ICT Milieu' has founded. All ICT companies can access the long-term agreement (MJA).

Currently, 42 ICT-sector related companies are participating in the long-term agreement. This are data centers, soft- and hardware companies, telecom companies and ICT consultants. The last long-term energy efficient plan for 2017-2020 is already presented. For more information about this plan, refer to <https://www.nldigital.nl/wp-content/uploads/2017/10/MJP-2017-2020-ICT-sector.pdf>.

Participation is open for every commercial, governmental or academic organization which is active in this working field.

² Previously named Nederland ICT

For more information about this initiative, refer to: <https://www.nldigital.nl/actueel/?filter-thema=duurzaamheid>

4. Overview

	Form		Benefits and expenses		Theme			Notes
	Congress	Long-term	Membership expenses	Benefit for ICT	ICT	Mobility	Sustainability	
USEF / EnergieKoplopers (intelligent networks)	No	Yes		Insights and participations in the newest developments in this area	X		X	ICT already is one of the founding partners
GridFlex Heeten	No	Yes		Insights and participations in the newest developments in this area	X		X	ICT already is one of the initiators / record in scope 3 analysis
Smart Charging (GreenFlux)	No	Yes		Insights and participations in the newest developments in with respect to charging stations and the techniques in the management of charging stations	X	X	X	ICT already is an initiator via the participation in GreenFlux / scope 3 analysis
Hosting	No	Yes		Reduce the energy consumption by ICT clients	X		X	Record in reduction plans / scope 3 analysis
Connekt	Yes	Yes	Regular member (€2.000)	Insights and participations in mobility issues and standards	X	X	X	Dialogue is started via InTraffic
TURNN	No	Yes	n.a.	Reduction CO ₂ emission / Flexibility in transport form		X	X	Participation via various projects
InfraTech	Yes		Congress expenses	Knowledge sharing about sustainable Infra & Mobility solutions	X	X	X	Annual
Waterinfodag	Yes		Congress expenses	Knowledge sharing about smart grids on sewage treatment plants	X		X	Annual
TOC Europe	Yes		Congress expenses	Knowledge sharing about more efficient container terminal management	X		X	Annual
Water congress	Yes		Congress expenses	Knowledge sharing about water management systems	X		X	Annual
Vakbeurs Energie	Yes		Congress expenses	Knowledge sharing about sustainable energy solutions and innovations	X		X	Annual
Nederland CO ₂ Neutraal	Yes		n/a	Practical tips on how to reduce CO ₂			X	Is considered
Nldigital	No	Yes	n/a	Insight and participation in the most recent developments with respect to sustainability	X		X	Is considered

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