

Type	Task			
Tijd	20180517			
Onderwerp	Explore data sets			
Deelnemers				
Inhoud afspraak	Subject	Responsibilities	Source	Person in charge
	Data exploration https://utrechtinc.nl/energyhacknl/data/?lang=eng	<ul style="list-style-type: none"> Explain the group the content of the dataset In case of open API connection → Develop some example code in Python to access the data 	Net Stations Strijp – S	Maikel
			Electricity Net Eindhoven	Maikel
			Enpuls ET Prognosis	Maikel
			RVO (Netherlands Enterprise Agency)	Maikel

Source	Explanation
Net Stations Strijp – S	<p>Dataset not available yet.</p> <p>Overall Content: Measurements of the average power for each quarter of the day for 12 grid stations. Each station has multiple connections (houses, stores, offices, etc.). Interface: Available through rest API, by using a grid station ID and the start- & enddate.</p>
Electricity Net Eindhoven	<p>Dataset not available yet.</p> <p>Overall Content: Not sure yet, according to the description it is the information of the components of the grid. So I can imagine that there are columns like the grid station ID, component ID, component type, maximum capacity, location, etc. Interface: Excel/CSV</p>
Enpuls ET Prognosis	<p>Dataset not available yet.</p>

	<p>Overall</p> <p>A dataset with information of areas (shape of areas are hexagons) considering the expected electrical vehicles in 2020, 2025 and 2030. There will be information about current and needed infrastructure (charging stations). I'm not sure if there is information about the capacity/power.</p> <p>Interface: Excel/CSV</p>
RVO (Netherlands Enterprise Agency)	<p>Open data, data available</p> <p>Overall:</p> <p>Public content provided by the government. Lots of datasets (thousands) on different topics.</p> <ul style="list-style-type: none"> • Government • Culture and recreation • economics • finance • real estate • international • agriculture • migration • nature • education • national security • justice • infrastructure • social • traffic • work/jobs • health care <p>Depending on the author of the data, the format changes. It can be an accessible pdf, csv, url, etc.</p> <p>I've tried to make some script to explore the dataset, but after a while stopped. It's better to first have a goal and then collect the data (to many options...)</p> <p>http://rvo.b3p.nl/viewer/app/Warmteatlas/v2# http://www.nationaalgeoregister.nl/geonetwork/srv/dut/catalog.search#/home</p> <p>These are more map based data (geo-data), which looks nice, but also a lot of datasets have missing data in Eindhoven. Not sure how we can use them.</p> <p>Different datasets are possible to download to Excel, csv, etc.</p> <p>I'm not familiar with geo-data or shape files, so I didn't manage to make some kinds of script to collect by the WFS/WMS services...</p>

Articles of concepts (quickscan)

url	concept(s)
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Bundles: Product Service System for home appliances https://www.bundles.nl/	Home applications for a fixed fee (monthly and for each time you use it)
Domoticz: Open Source Home Automation http://www.domoticz.com/	English
Energieverbruiksmanagers: An overview of all products by Milieucentraal https://www.energieverbruiksmanagers.nl/productoverzicht/	MultiplerTools to give insights in energy use, control the charging of EV (by solar), etc.
Energy Bazaar: Blockchain-based grid optimization https://www.energybazaar.org/home-energy-bazaar-energy-trading-p	English
EnergyCoin: Cryptocurrency for green energy https://energycoin.eu/	English
Enpuls innovation cases https://www.enpuls.nl/innovaties-cases/	<ul style="list-style-type: none"> • Jouw Energie Moment: To make consumers change their behavior in using energy (timeshift, reduce, etc.) • Brew beer with biogas • Smart grid with warmth (?) energy of industrie to heat households • Buurkracht: Organize as much as people in the neighbourhood to reduce energy (isolation, solarpanels, smart tools to gain insight in energy usage. • Social charging app: App to communicate with other EV-drivers to ask if a loading station is available soon. • Market-mechanisms: Trying to develop new markets in flexibility (buy/sell energy, optimize) • Smart charging: shift the charging in time to reduce use of grid • Cooperative with water purification organizations: biogas • Smart storage: Install storage to reduce peaks in grid power • Van zon krijg je energie: Development of education material for primary schools to educate kids about energy and how to reduce usage.

<p>Flex Challenge (Enpuls) https://www.enpuls.nl/flexchallenge</p>	<p>Several challenges for everybody (?)</p> <ul style="list-style-type: none"> • Solar • EV • Energygap (consumption - production) • Wildcard
<p>Fritts: supply of solar panels https://fritts.nl/</p>	<p>Supplier of solar panels</p>
<p>Greenhome: Scan to save energy https://greenhome.nl/</p>	<p>Tool to determine how to loose the gas-connection:</p> <ul style="list-style-type: none"> • Isolation (roof, floor, walls, windows) • Ventilation • Heating (heatpump, infrared panels) • Solar (Solar water heater, solar panels)
<p>HIER opgewekt: The knowledge platform for local sustainable energy initiatives https://www.hieropgewekt.nl/</p>	<p>Website with information what types of local initiatives there are.</p>
<p>Huis vol energie: Marketplace for homeowners to live energy-neutral https://huisvolenergie.nl/</p>	<p>Building sustainable houses</p>
<p>Ipsum Energy: Saving energy at home https://www.ipsumenergy.com/</p>	<p>Tool to detect high usage applications in houses</p>
<p>Jouliette: Blockchain-based energy token https://jouliette.net/index.html</p>	<p>Tool to share energy (?)</p>
<p>Lombox laadpalen: Charging piles on solar energy http://www.lombox.nl/laadpalen.html</p>	<p>? Doesn't work?</p>
<p>Mijn energiebundel: Open Source energy monitors for housing corporations, construction companies and private individuals (NOM, EPV, BENG) https://www.mijnenergiebundel.nl/</p>	<p>Monitoring of energy usage</p>
<p>Ninja Sphere: Smart home controller https://ninjablocks.com/</p>	<p>English</p>
<p>Onzo: Big Data analysis solutions for energy http://www.onzo.com/</p>	<p>English?</p>
<p>OpenEnergyMonitor: Open source monitoring for understanding energy https://openenergymonitor.org/</p>	<p>Monitoring</p>
<p>Perfect Place: Analysis Tool for the liveability of an area https://www.utrechtinc.nl/companies/perfect-place/</p>	

Senfal: Optimize energy purchasing (flexibility) https://senfal.com/	Development of flexservices for wind and industry
Sensorfact: Smart energy savings for manufacturing https://sensorfact.nl/	Sensors, monitoring
Social Charging: app to easily share public and corporate charging points and improve charging efficiency https://www.social-charging.com/	App to communicate with other EV-drivers to ask if a loading station is available soon.
Solease: Rental of solar panels (sustainable area development) https://www.solease.nl/	Rental of solar panels
Sundata: Optimize use of solar panels https://sundata.nl/	Monitoring of solar panels/possibilities of solar panels
Sungevity: Full-service solar panels https://www.sungevity.nl/	Advising of solar possibilities
We Drive Solar: Shared Auto Service with electric cars http://www.wedrivesolar.nl/	? Doesn't work?

Idea for brainstorm/after brainstorm

<https://triz-journal.com/40-inventive-principles-examples/>