

ENERGY

De wijk als energieleverancier

Homelab2050

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27 november 2014

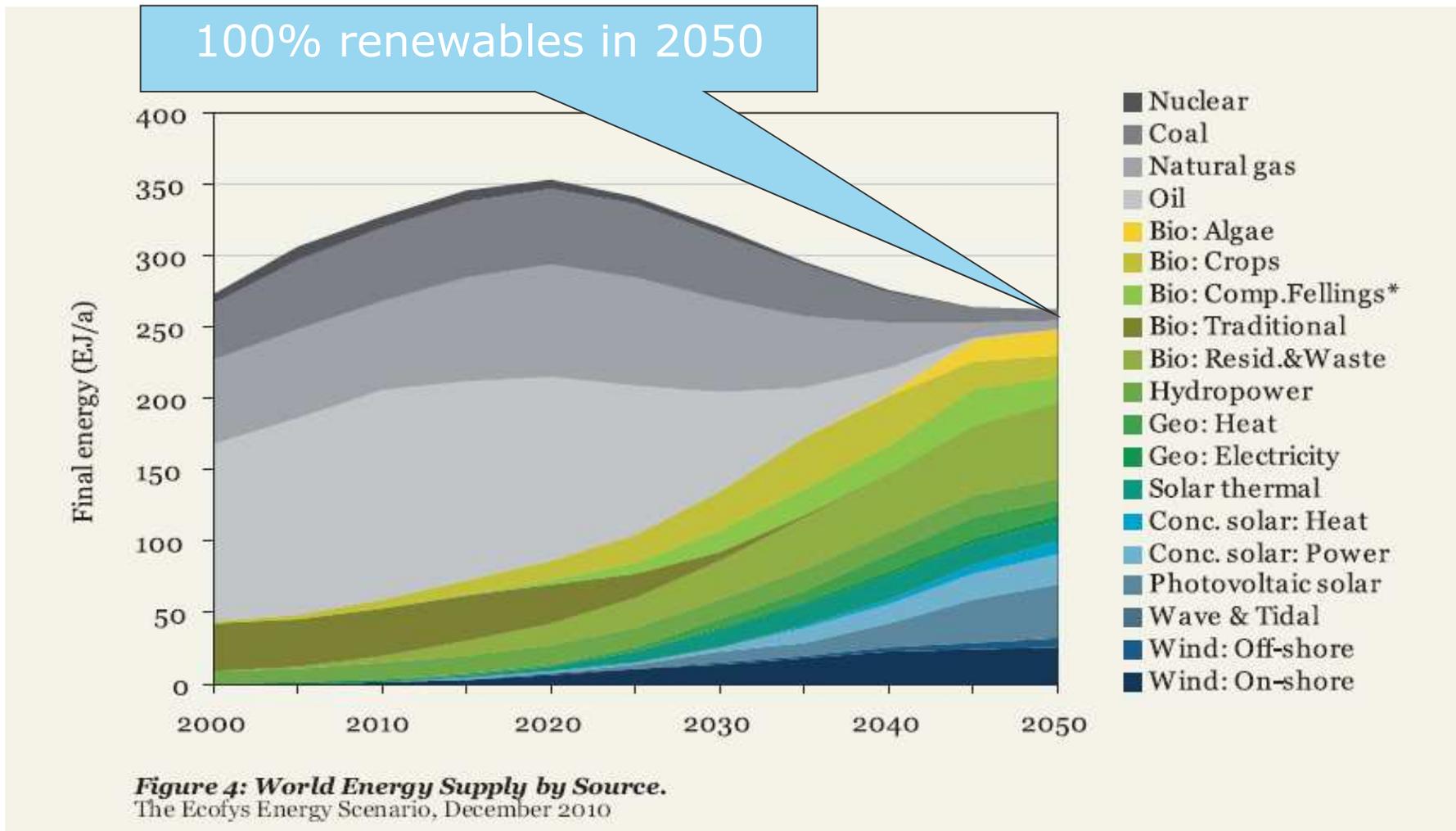


The World of Energy: Six major trends



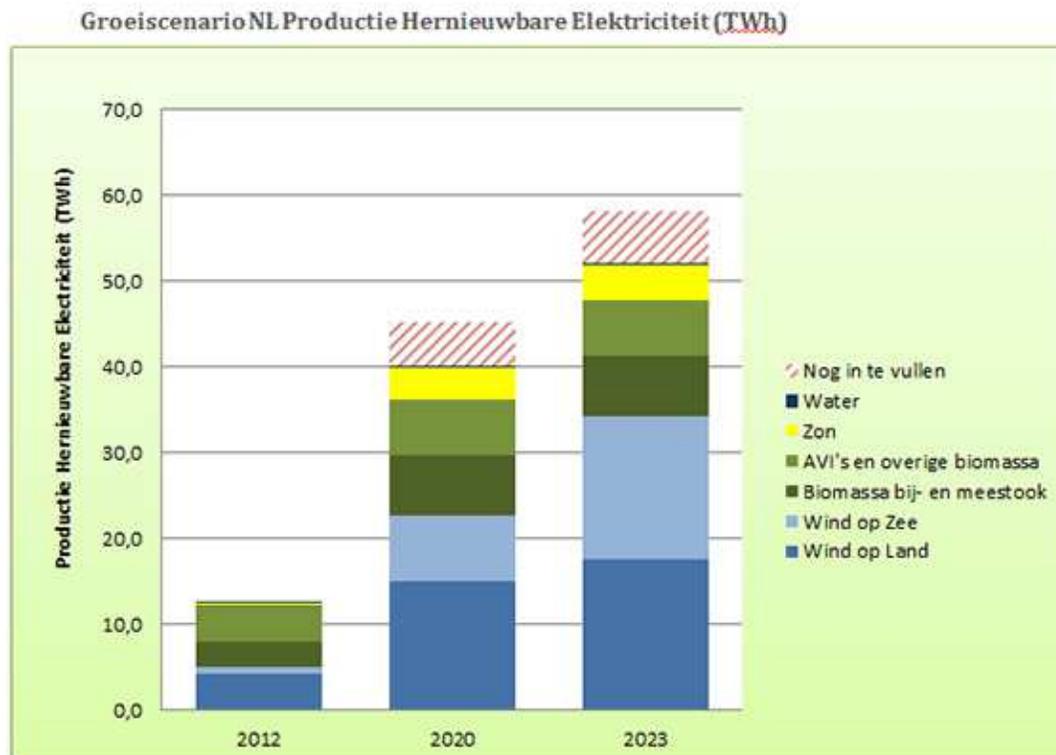
1. Increased electricity demand
2. Environmental responsibility or stewardship
3. Declining fossil fuel supplies
4. Aging assets and workforce
5. Advancing technology, e.g. ICT
6. Maintaining reliability

Energy transition in the view of WWF



Source: WWF energy report 2011

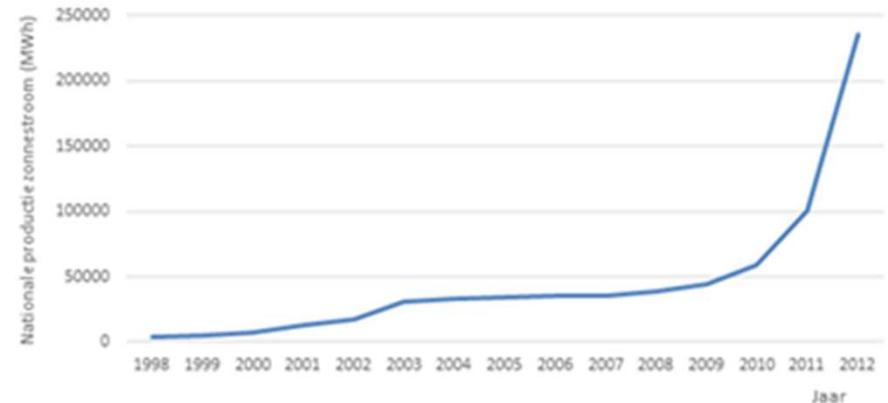
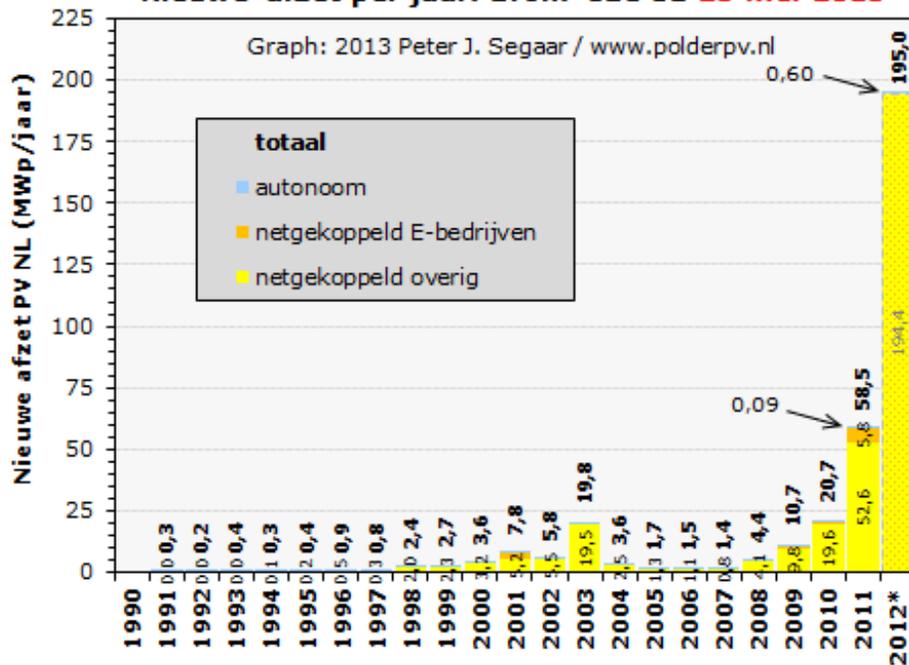
Scenario's uit het Energieakkoord voor Nederland



Nederland wil naar 14% duurzame energie in 2020

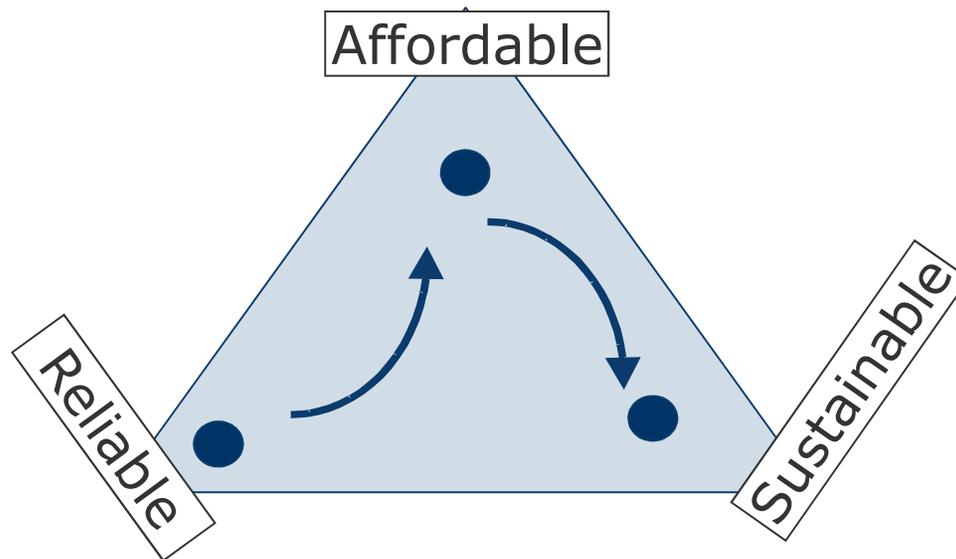
Solar market in The Netherlands

Afzet aan eindgebruikers PV in Nederland.
Nieuwe afzet per jaar. Bron: CBS SL 23 mei 2013

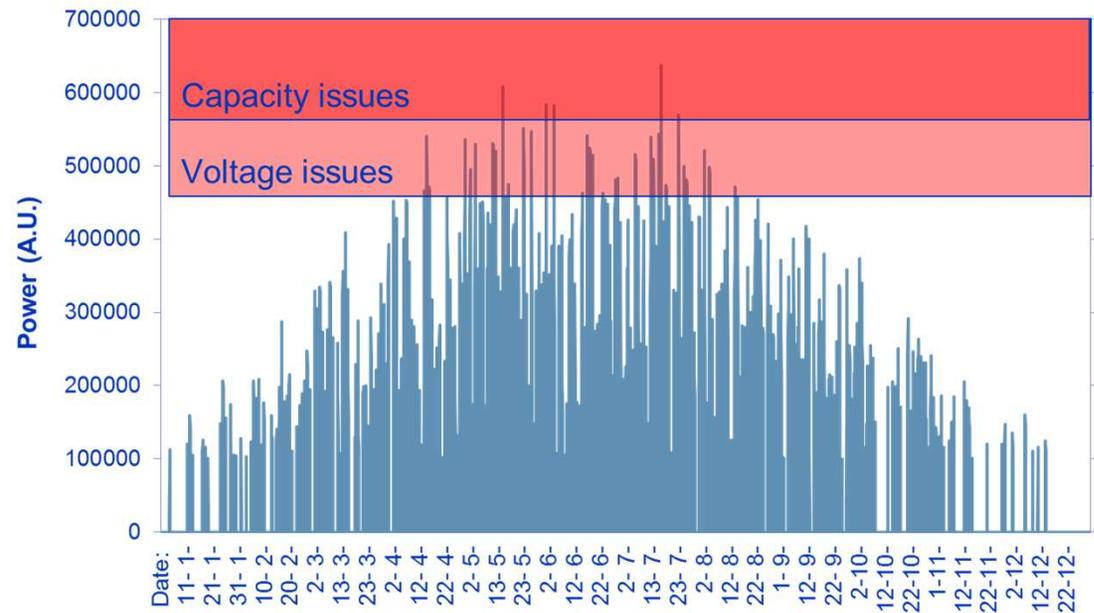
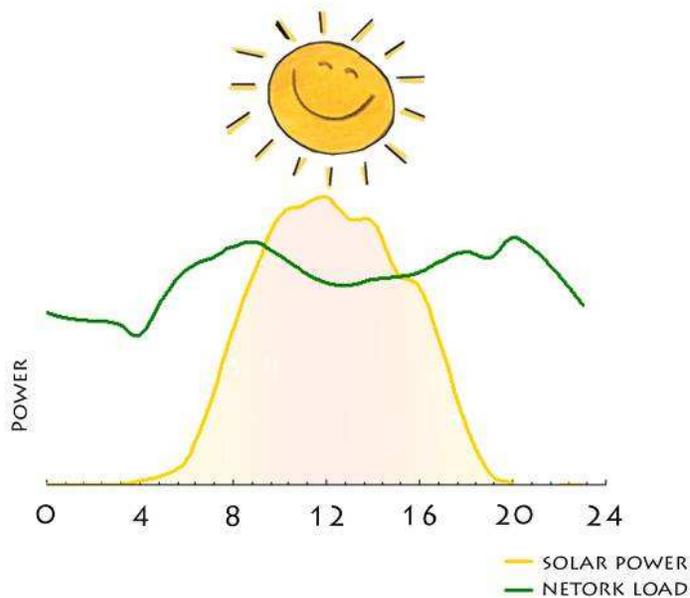


Nederland heeft een doel van 4 GW zon in 2020

Three parallel trends in European power sector



Impact of solar production



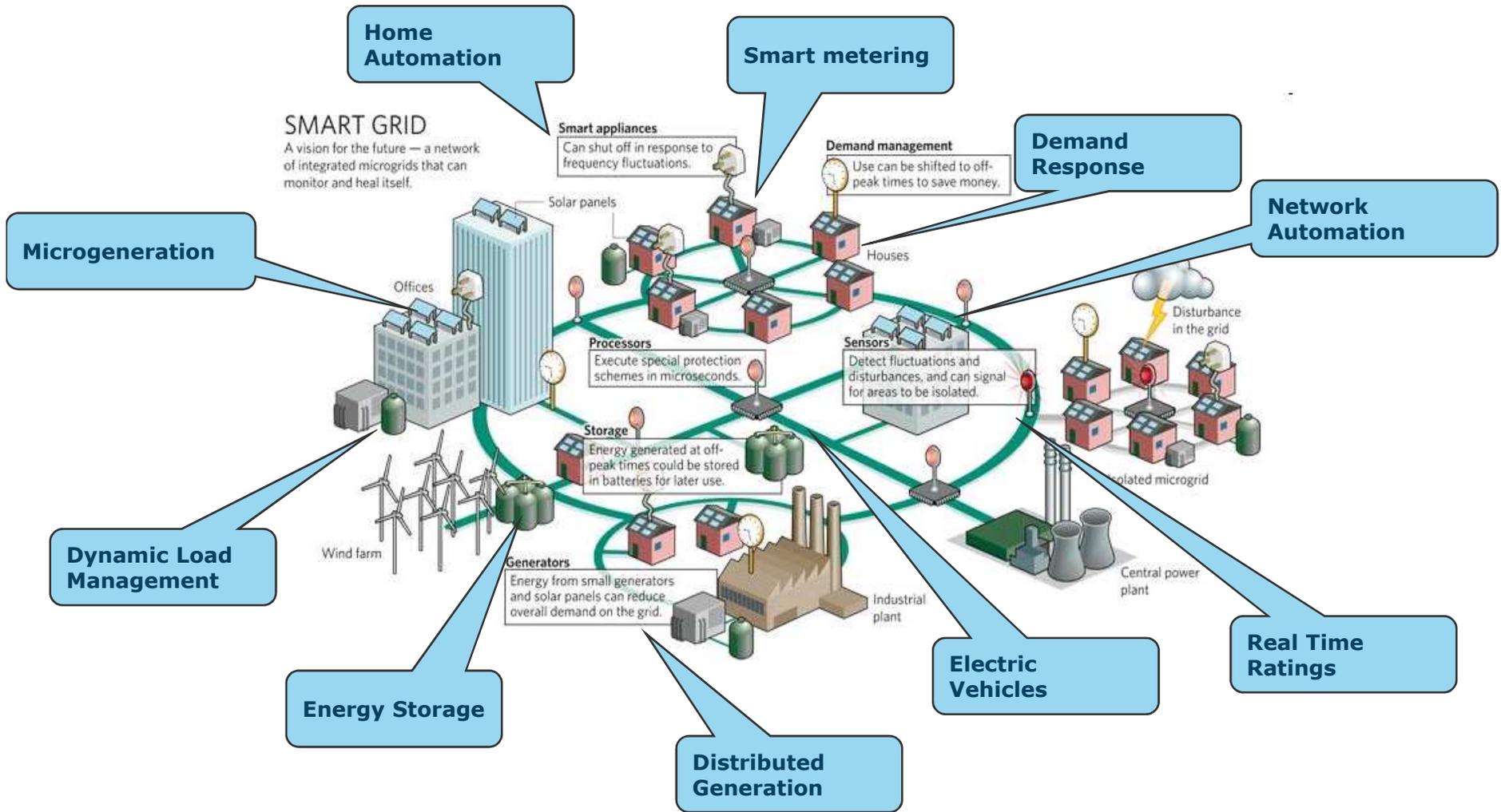
Hoe passen deze duurzame energiebronnen in de bestaande infrastructuur?

Large volumes of RES require more flexibility ...

- Fast controllable power generation, including curtailment of e.g. wind power
- Large(r) interconnection capacity, and cross-border trading
- Energy storage, small-scale and large-scale systems (and services)
- Smart local energy, i.e. integration of DG, demand response, and active participation of end-users



Smart local energy systems ...



The energy consumer will have a more active role ...

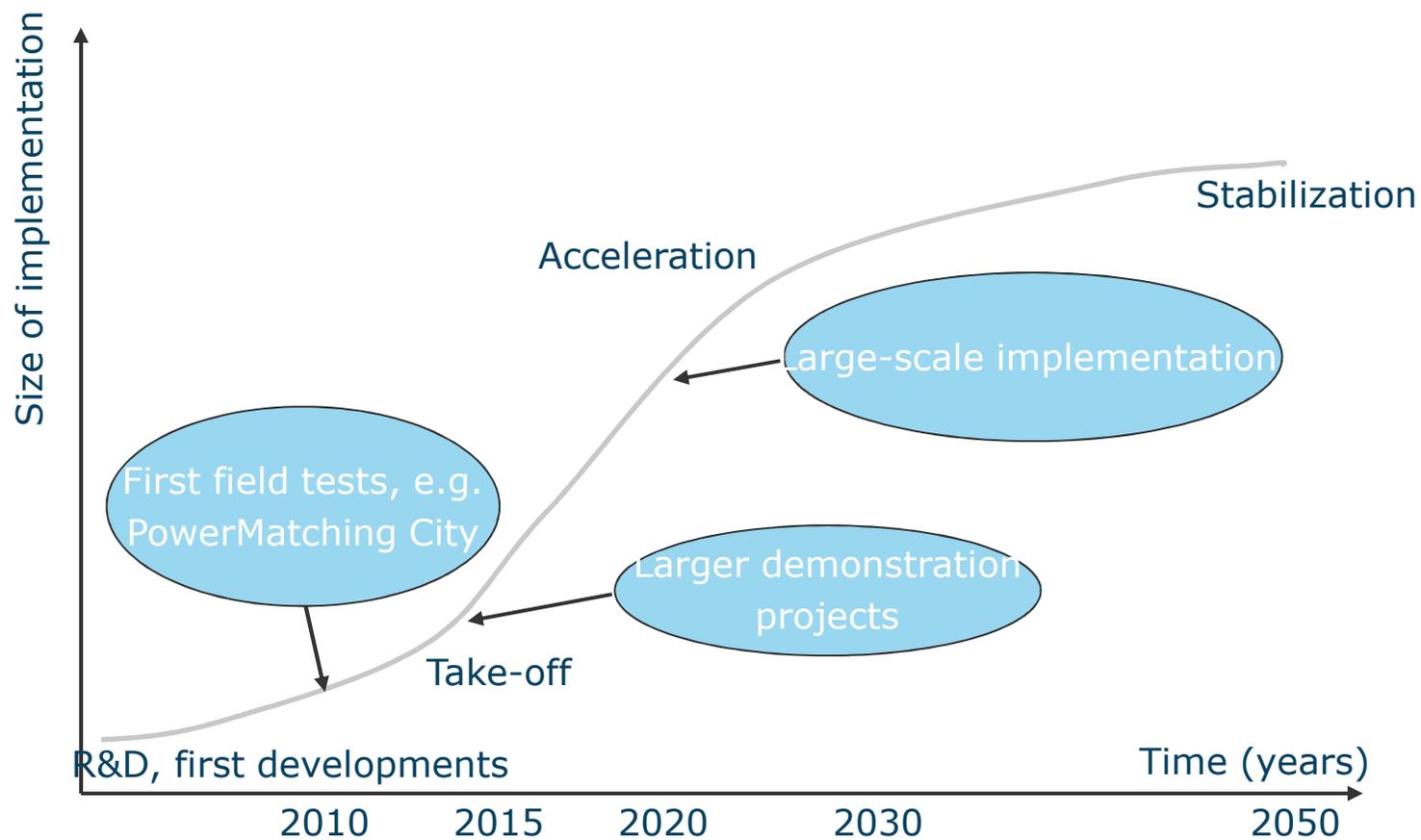
- Passive energy consumers become participating prosumers, and finally modern 'energy down- and uploaders'
- They will affect power flow and the energy market which will stimulate the development of new market mechanisms, and new services



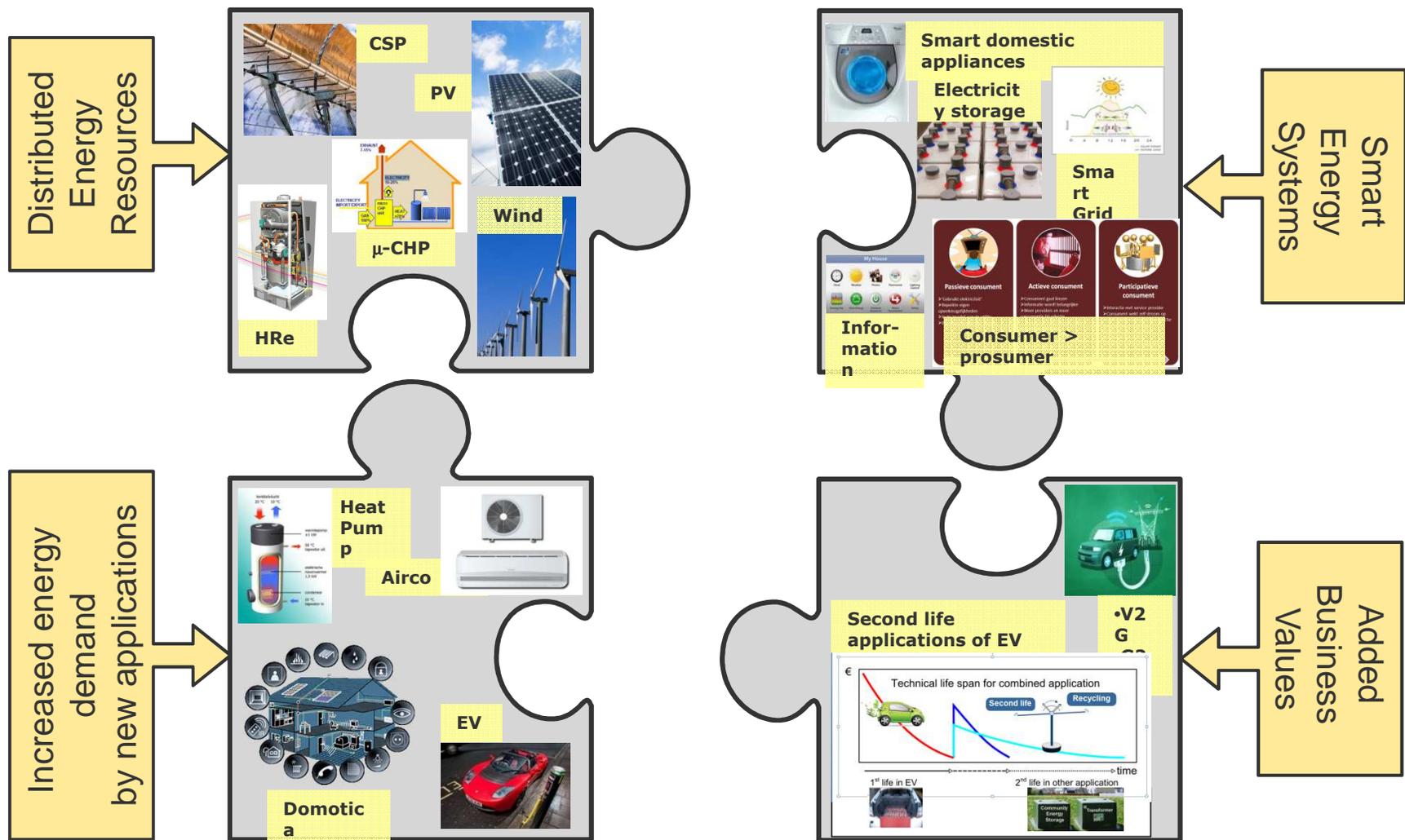
... and 'new' companies will enter the energy market

- ICT and telecom
- Building industry and contractors
- Technology providers and manufacturers
- Automotive industry and suppliers
- Service providers and other energy providers
- Housing corporations and local governmental bodies
- Virtual organizations of energy consumers

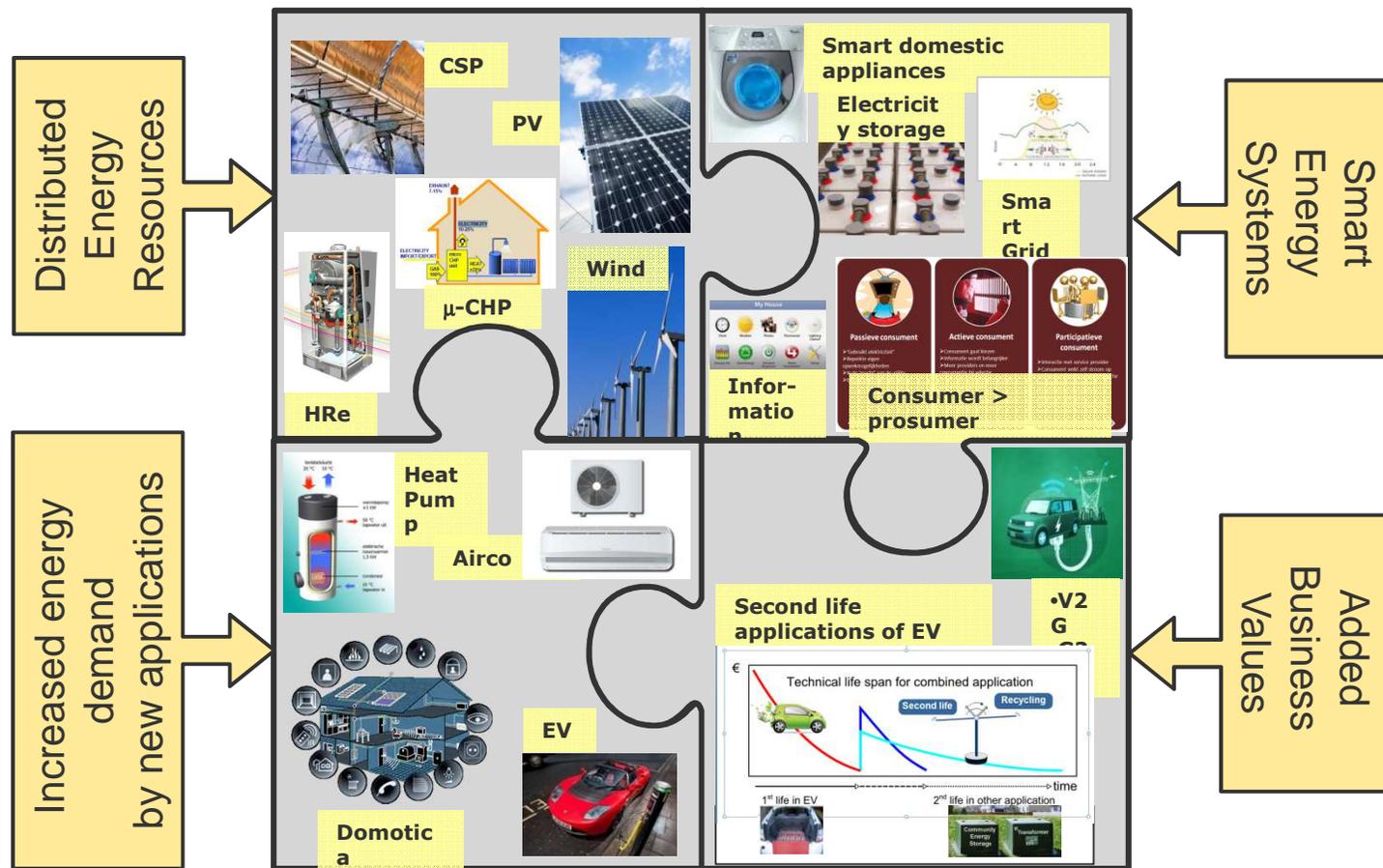
From R&D, via pilots to large-scale implementation



Strengthen the business case for New Energy



Strengthen the business case for New Energy



... in which end-user acceptance & participation is key



We like electric cars

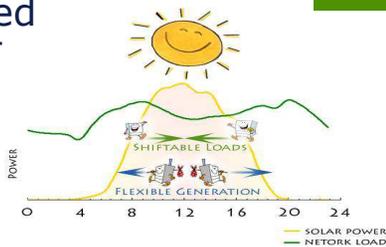


We like smart home appliances



We are participating producers of energy

Matched by ICT

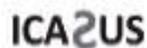


We save money with micro CHP and

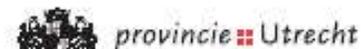


Rendement smartgrid voor iedereen!

Projectpartners



Co-financiers



Smart Grid Rendement voor Iedereen

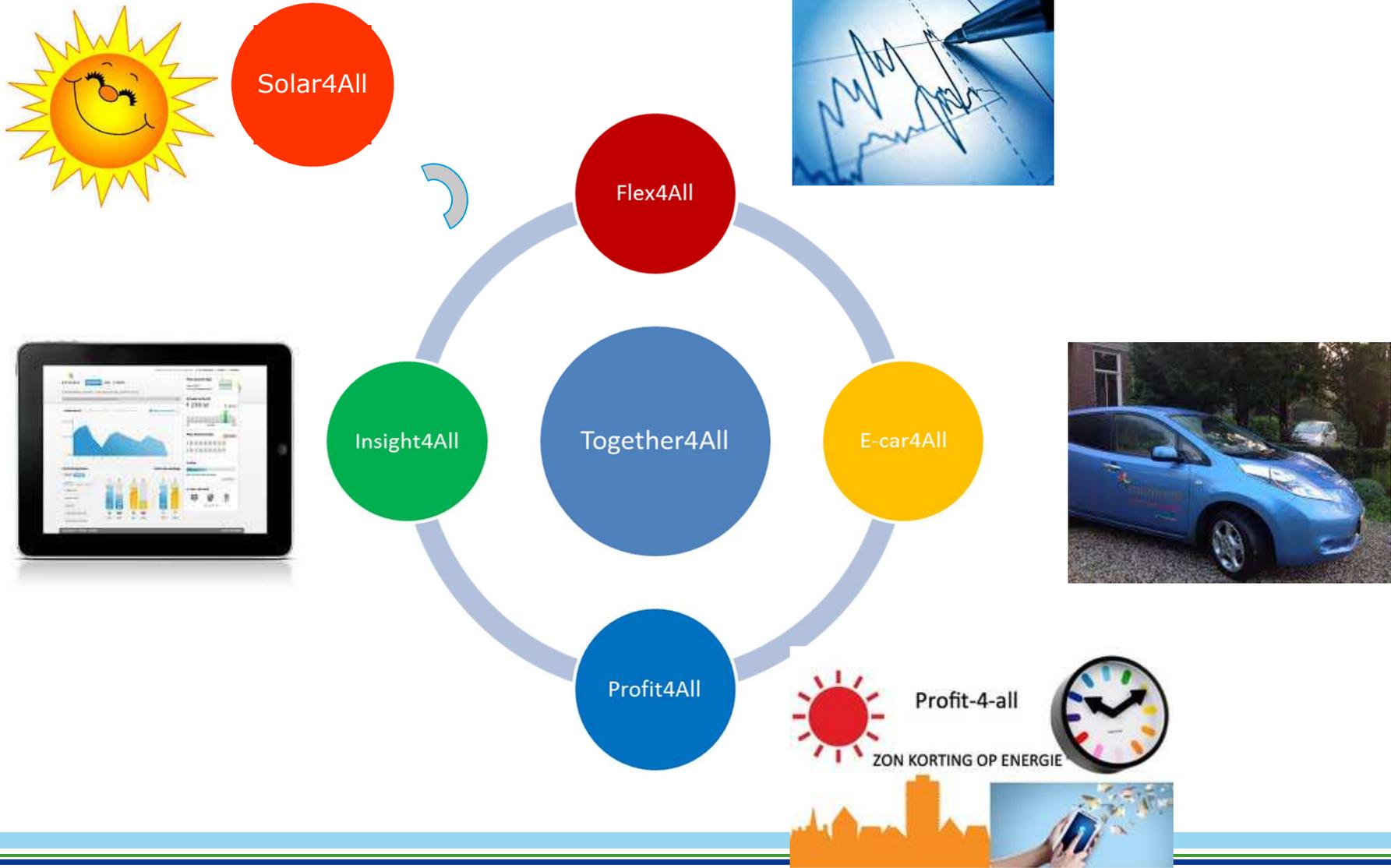
- Ontwikkeling van 8 smart grid dienstverleningsconcepten
- Toetsen van deze concepten in 2 pilots van 100 huishoudens in Amersfoort en Utrecht
- Dienstverleningsconcepten gericht op energiebesparing en optimaal gebruik eigen opgewekte zonne-energie



Amersfoort
Nieuwland



Innovatieve diensten



Inzicht in je eigen energieverbruik: Insight4All



- App voor smartphones en tablets
- Webportal
- Slimme meter, zonnepanelen, wasmachine, droger, vaatwasser, koelkast, vriezer



Doel: 5% energiebesparing

Gezamenlijk energiebesparen: Together4All



AmersVolt

 **NET2GRID**

+

SHUFFL 



Bottom up benadering

Traditional Top-down



Bottom-up Approach



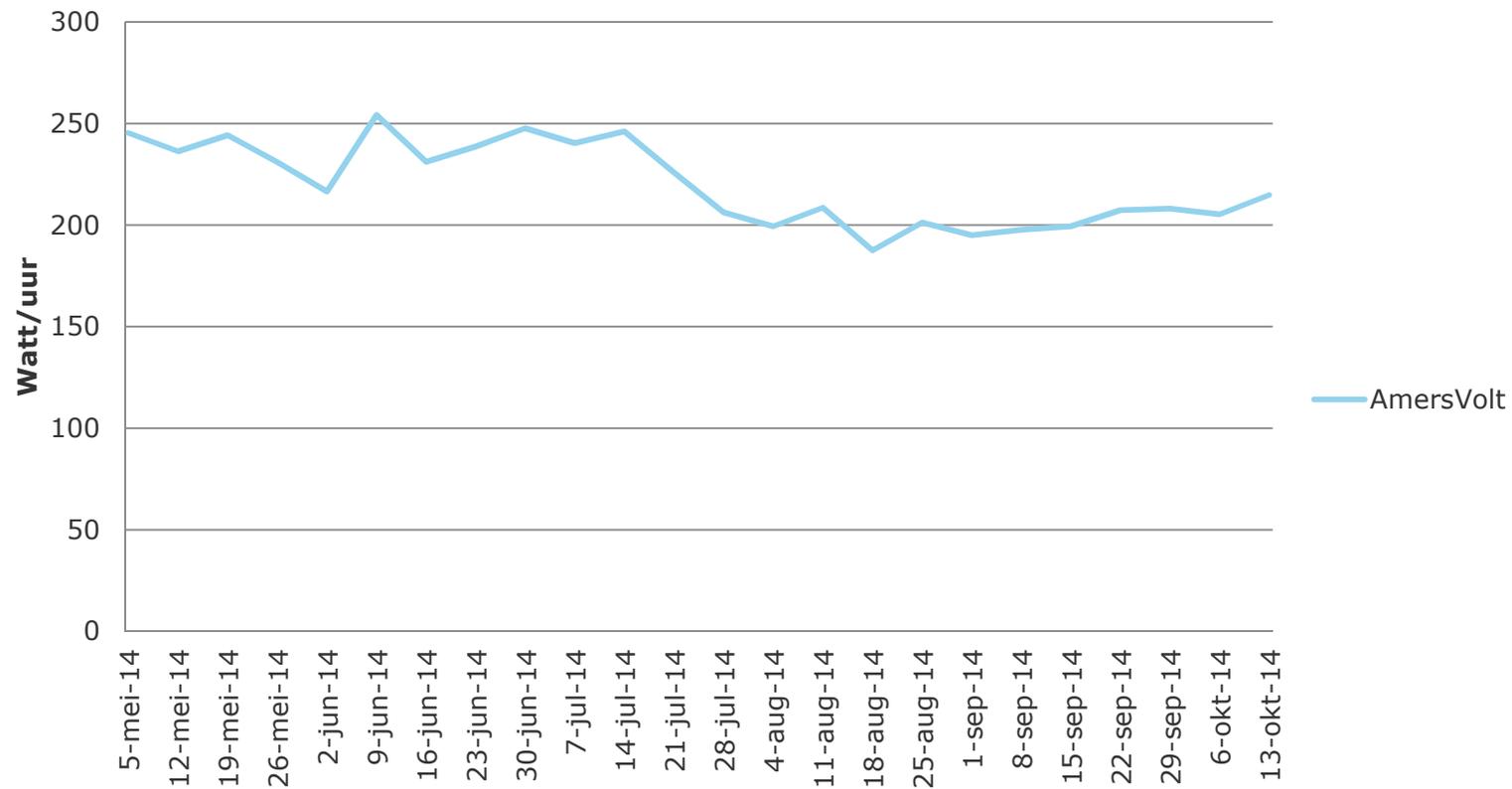
BEWONERSCOLLECTIEF

- Via ICA methodiek gerichte publiciteit
- 100-10-1 regel
 - 1200 woningen met PV
 - 120 aanmeldingen
 - 12 ambassadeurs
- Alle ambassadeurs zijn professionals op eigen vakgebied
- Communicatie / Techniek / vaktechnisch
- 100 deelnemers van begin tot eind
 - (1 invaller, wachtlijst van 20 mensen)



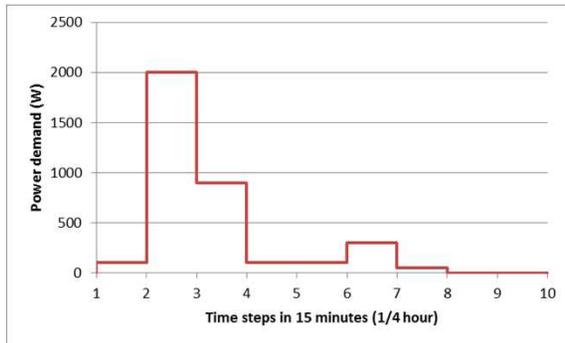
Amers Volt

Doel Together4All: continu verbruik verminderen

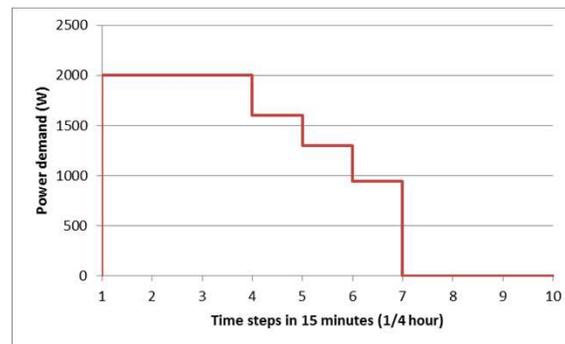


Doel: verminderen continu verbruik met 20%

Vraagsturing apparaten: Flex4all



Profiel Wasmachine



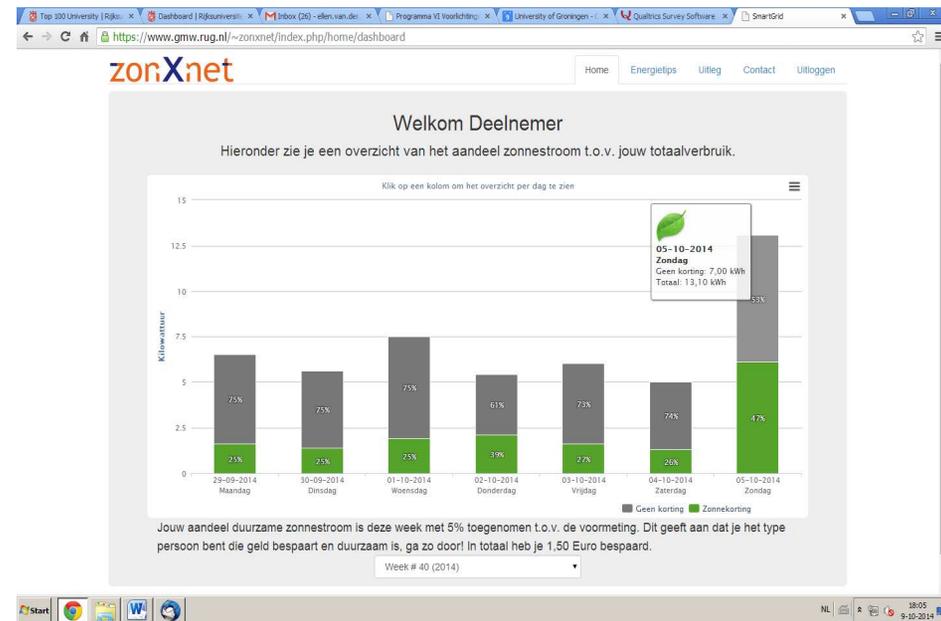
Profiel Droger



Profiel Vaatwasser

Conclusie: geen mogelijkheden tot significante markt trading met deze 3 apparaten

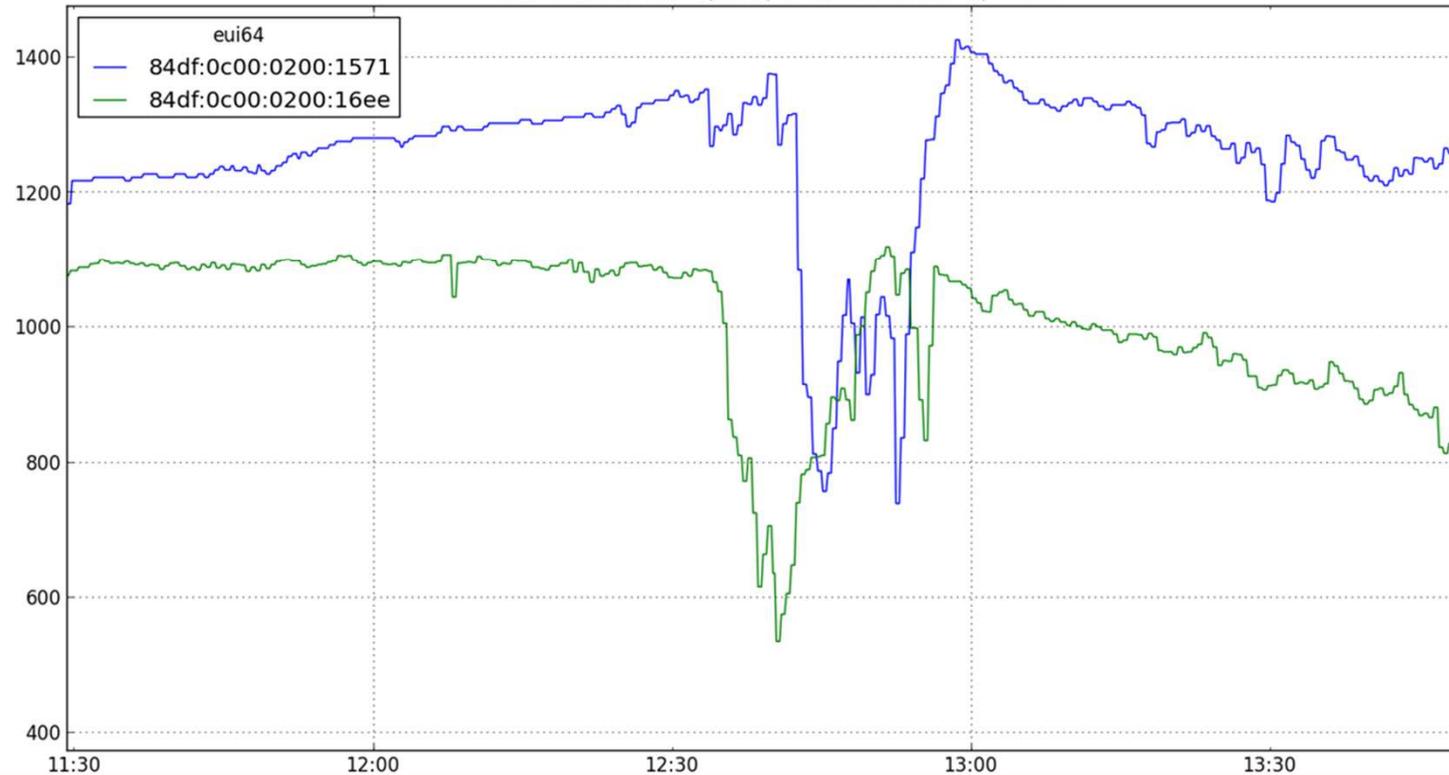
De piek in het energieverbruik verschuiven: profit4All



Doel: Meer zonne energie verbruiken en lagere pieken in het verbruik

Solar4All: Een wolk trekt over Amersfoort.....

Wind direction South=>North, Average wind speed= 45 m/s, PV systems: 1571=North Amers (Kikkerbeet), 16ee: South Amers (Brucknerstraat)
Vertical distance=6,5km, direct distance=6,83km



Doel: De energielevering van zonnepanelen voorspellen door informatie te delen

Vragen?

Contact

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SAFER, SMARTER, GREENER