

Smart Consumers – a Nordic Perspective

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Smart solutions for energy consumers

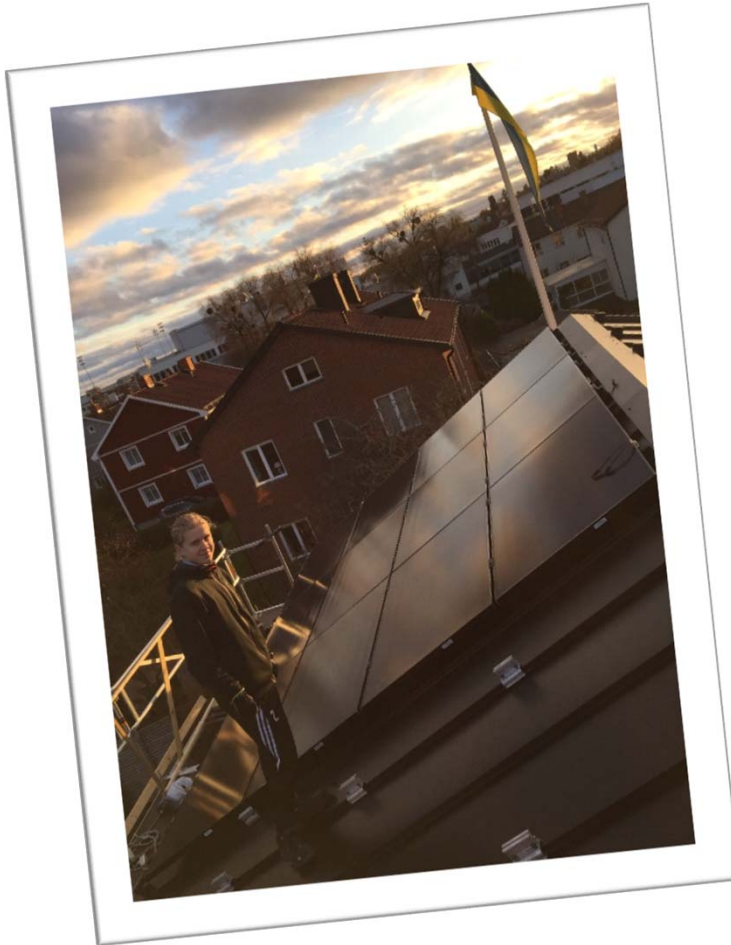
“[...] important transformations with the deployment of smart meters, smart controls, the emergence of smart appliances, their integration in home networks [...]”

“In addition, some of the energy consumers are becoming 'prosumers' [...]”



Integration of renewables

PV-system installation
9 out of 40 panels



Saturday 19 Nov, 1:30 pm
Vallgatan 9, Västerås, Sweden

- Building is connected to district heating system
- Total power (STC): 12 kW
- Annual production: 9 500 kWh electricity
- Expect to be net electricity producer in 2017 (+1500 kWh)
- Do have a Nordpool spot market contract via electricity retailer

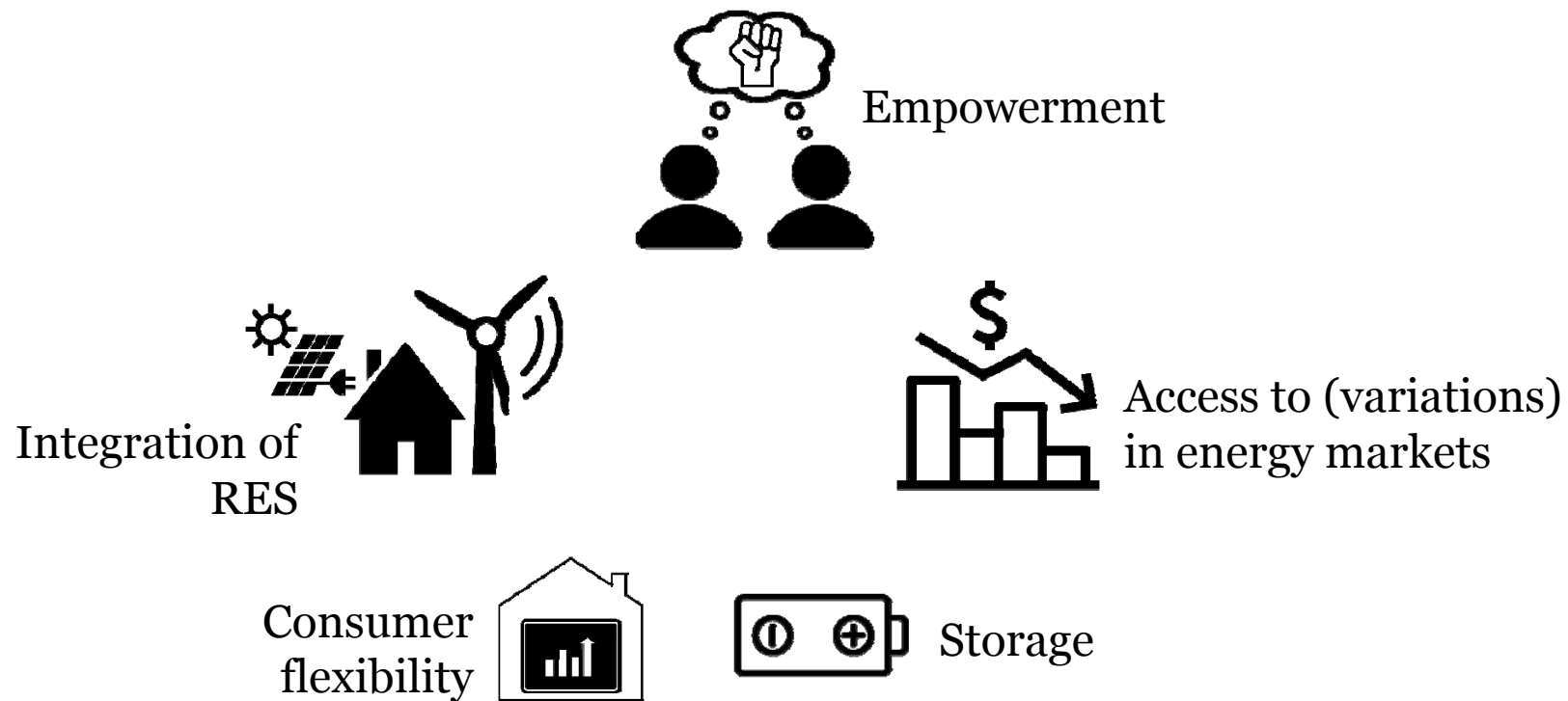


Smart solutions for energy consumers

*“A prerequisite for the deployment of these smart technologies and services is to **empower consumer** with the establishment of a regulatory framework that allows demand-response and energy efficiency services, where the availability of information for consumers is guaranteed and a secure but non-discriminatory handling of data is in place.”*

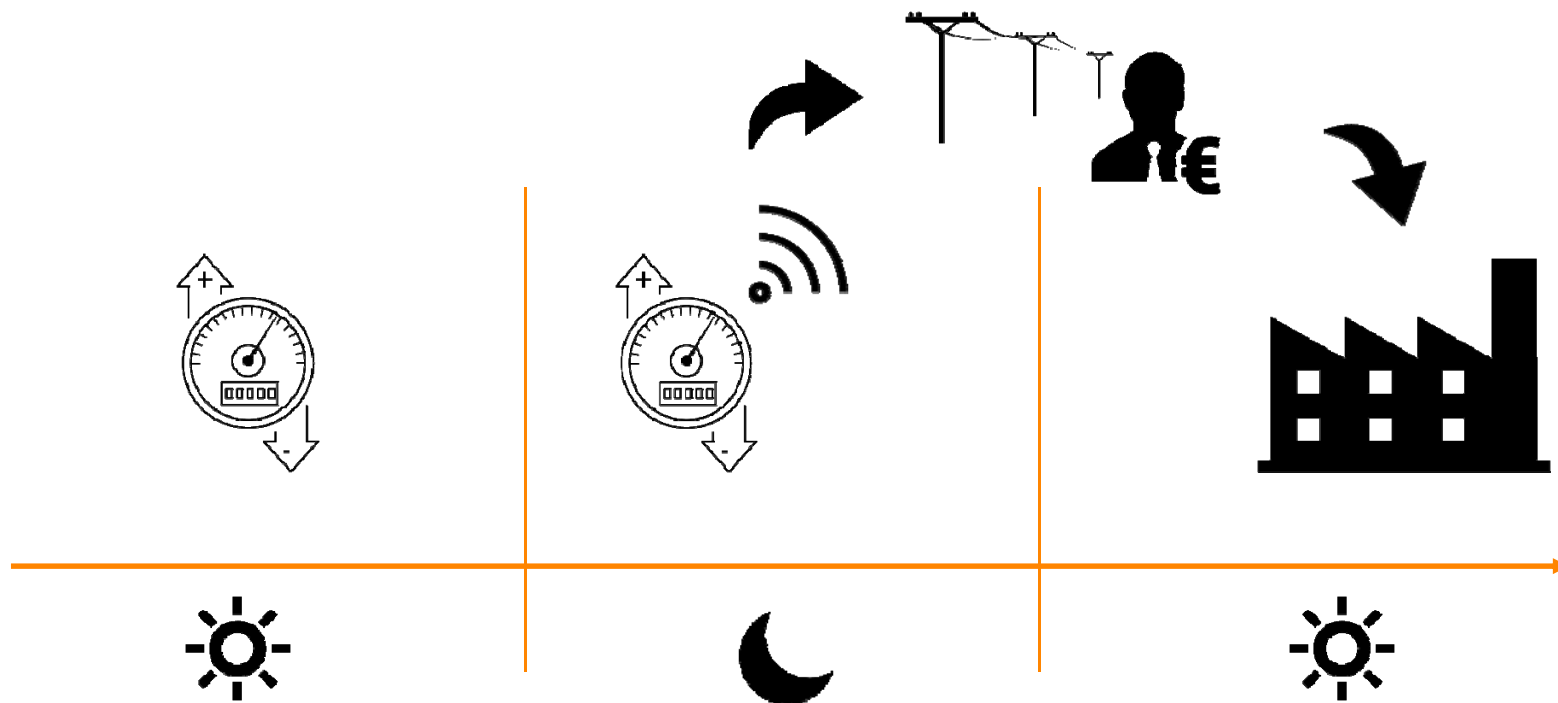


Do we need smartness in the energy system?



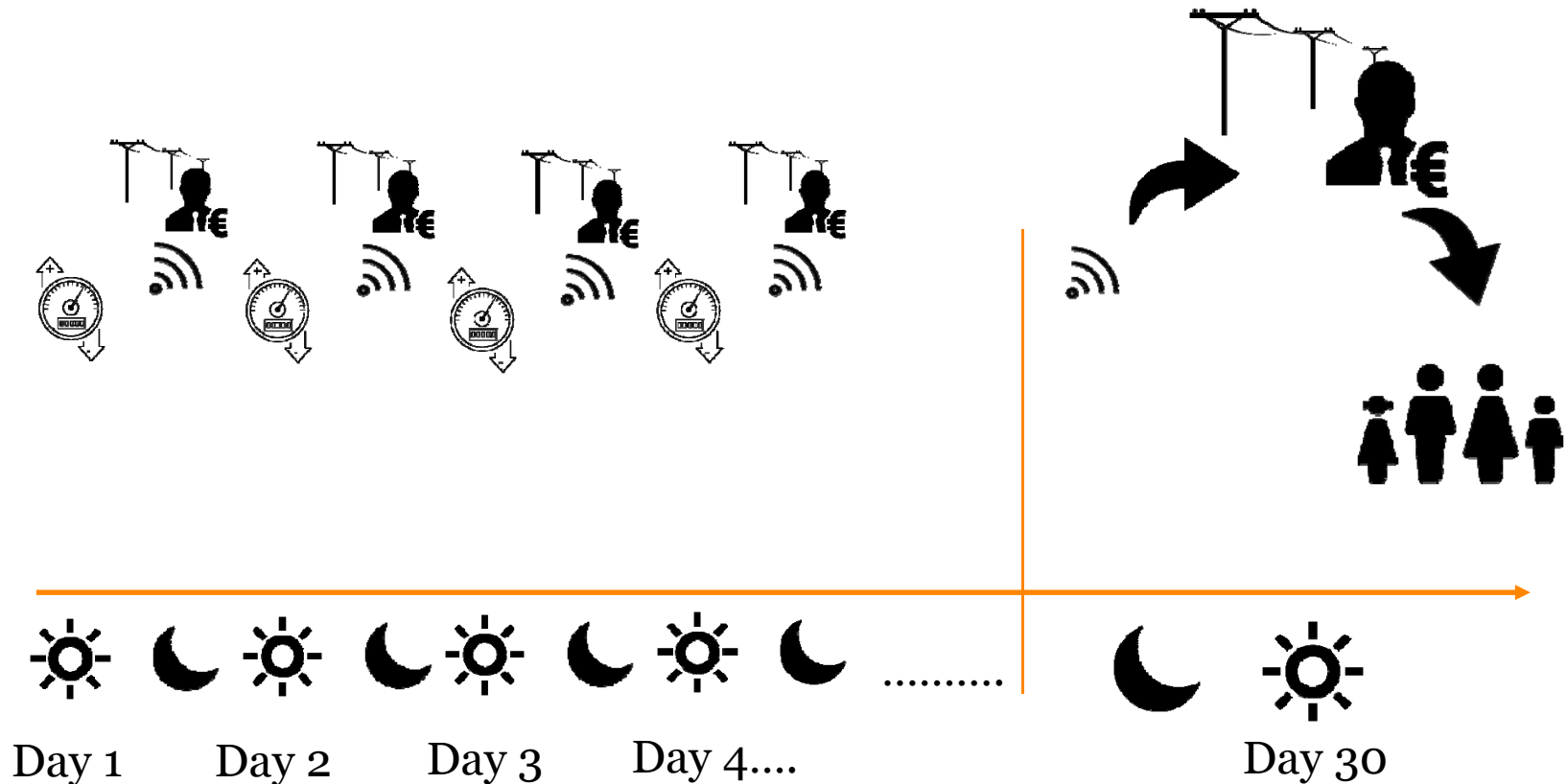


Access to smart meter data through regulation is fundamental!



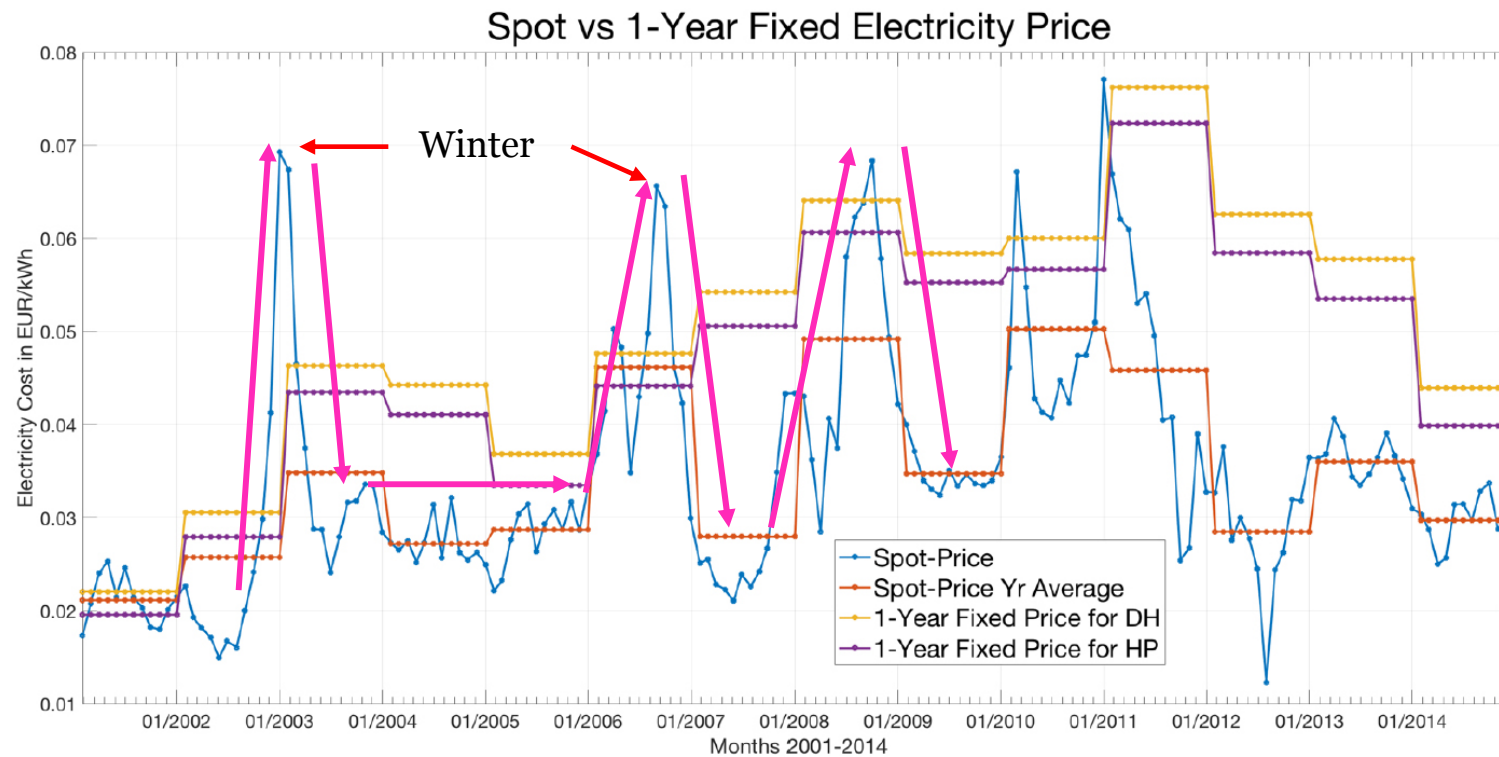


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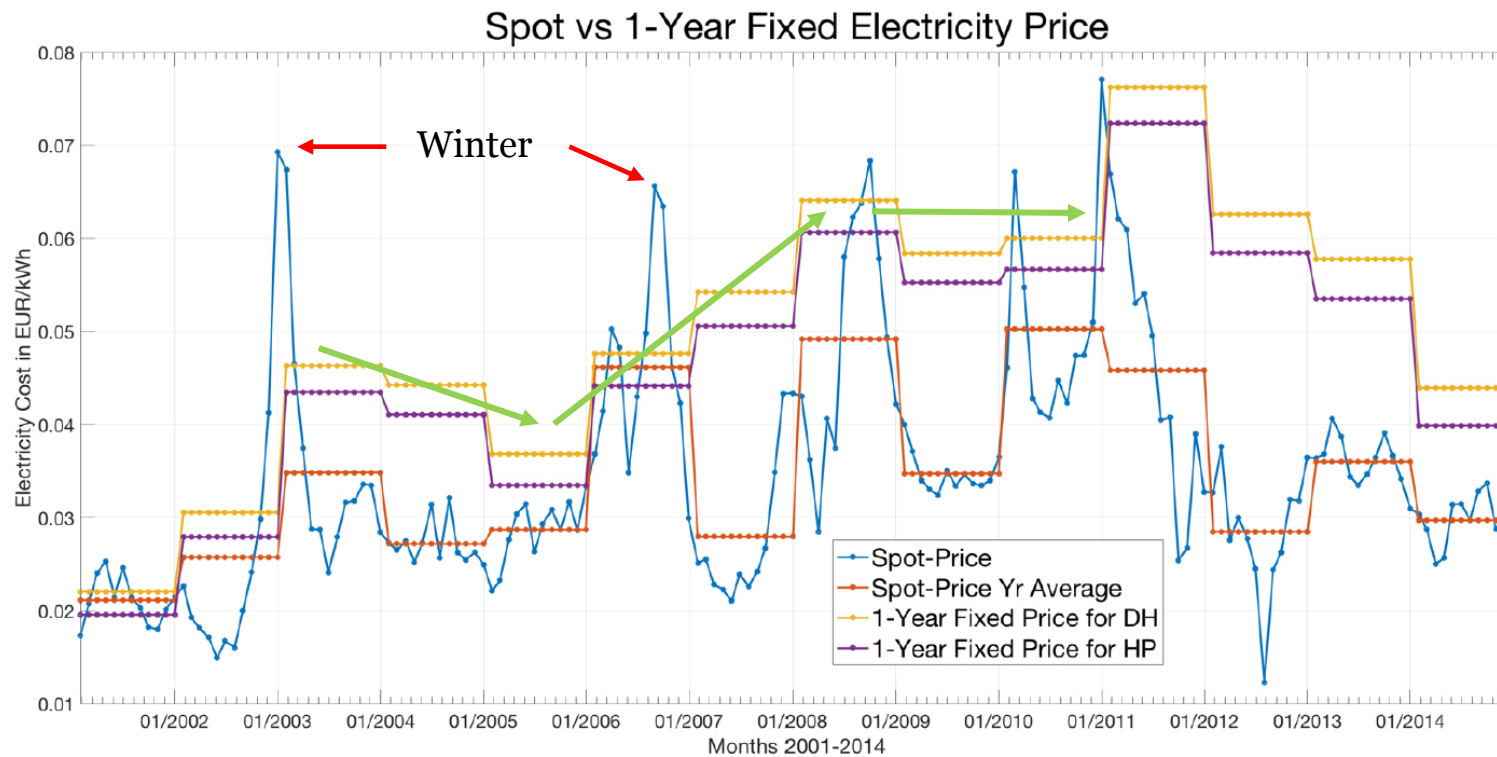


Values are not realized in the end-users side



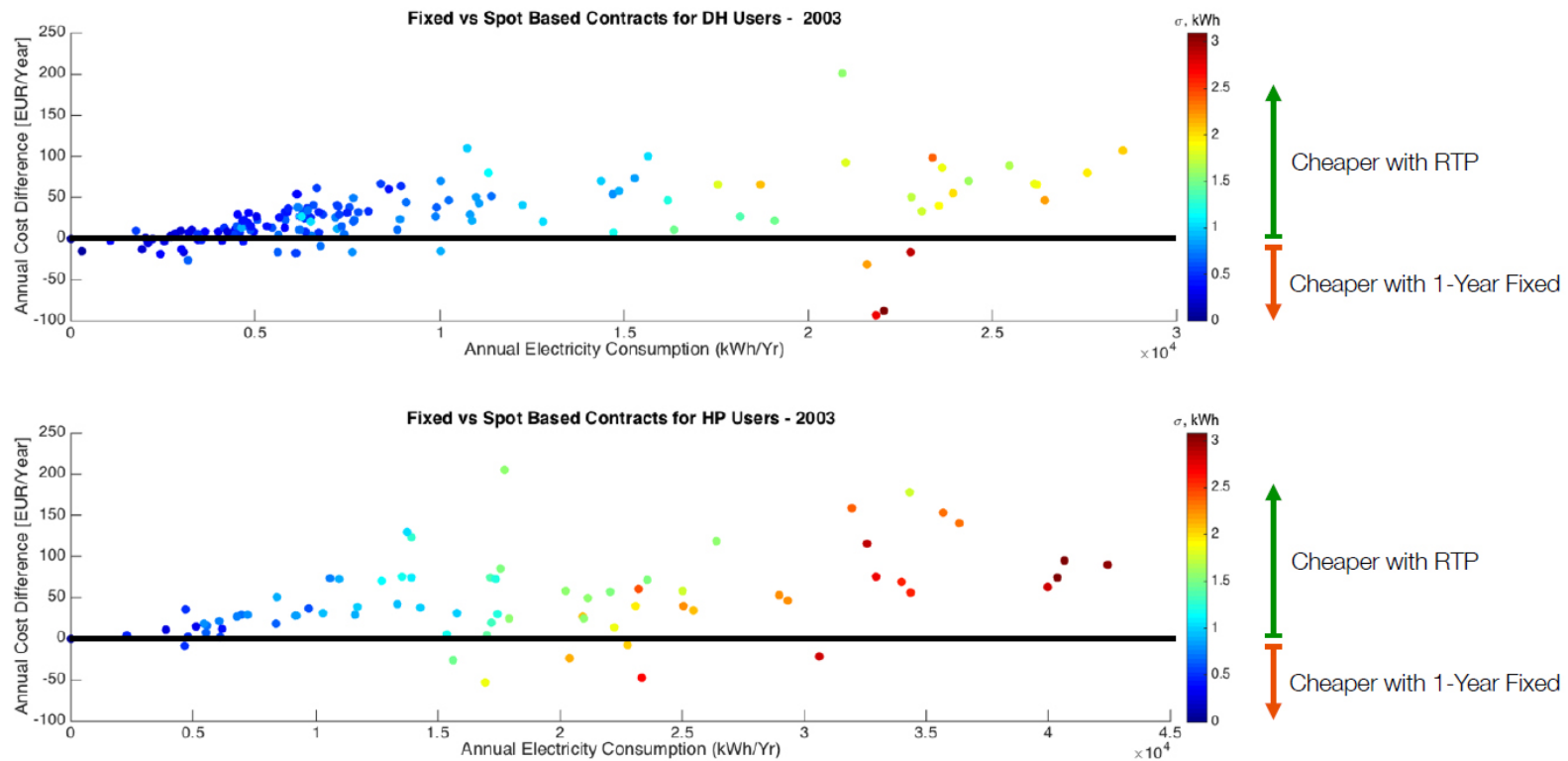


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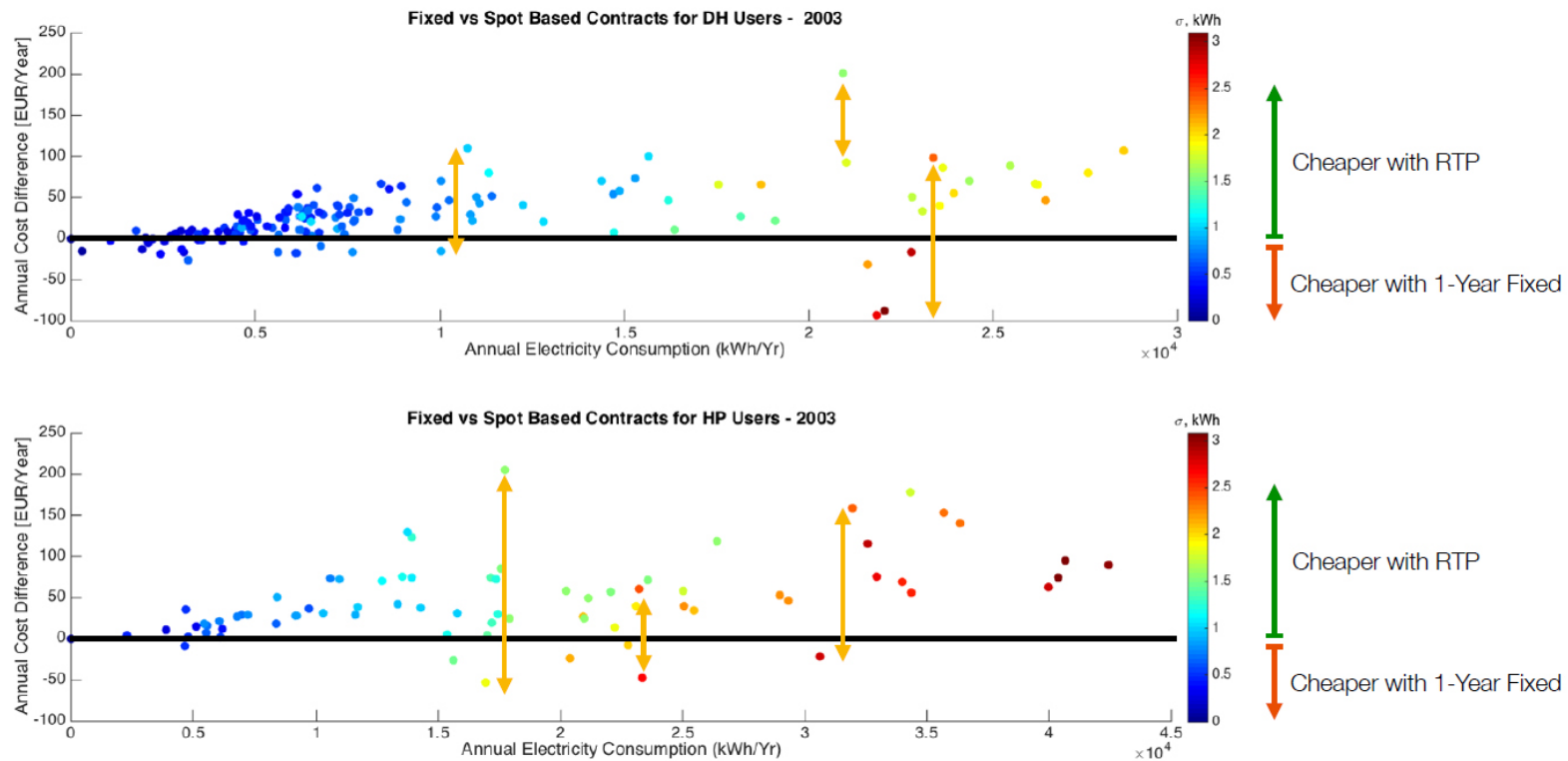


Values are not realized in the end-users side





Do not ask how much, ask when!



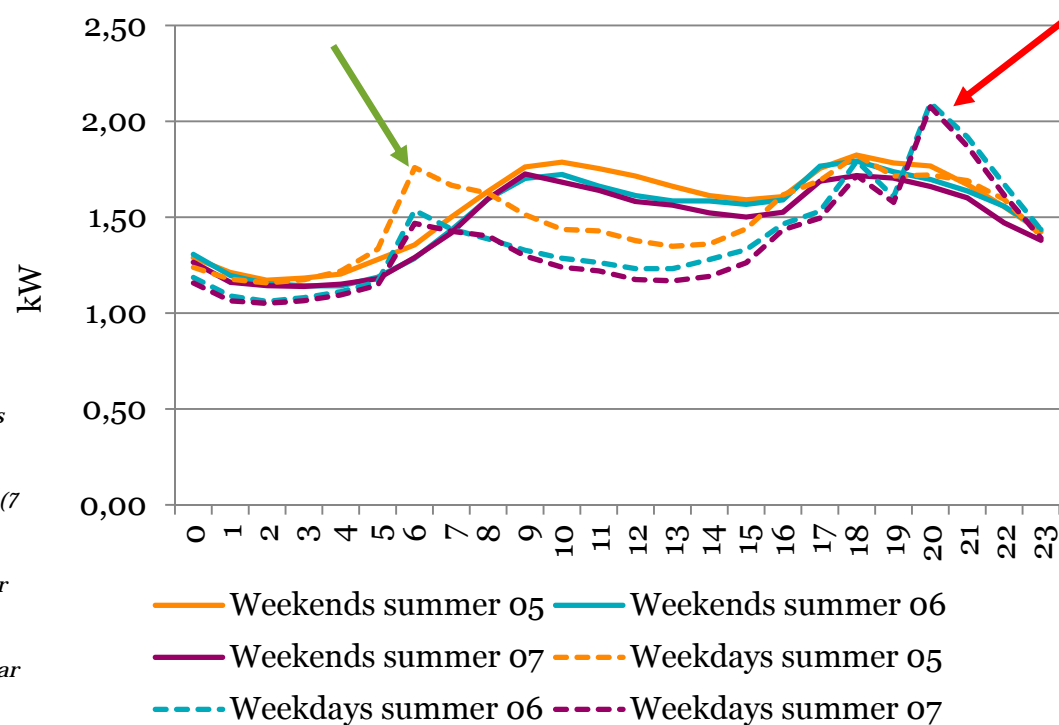


Effects with a demand-based electricity distribution tariff...

Bartusch, C., Wallin, F., Odlaire, M., Vassileva, I., Wester, L., (2011). "Introducing a demand-based electricity distribution tariff in the residential sector: Demand response and customer perception", *Int. Journal of Energy Policy, Energy Policy*, Vol. 39, No. 9, pp. 5008–5025, 2011.

Investiation at Sala-
Heby Energi Nät

- Avg. of 5 load peaks per month
- 89 kr/kW winter (7-19)
- 34 kr/kW summer (7-19)
- 2005 reference year





One solution does not fit all!

Age	Letter	Website	e-mail	SMS	MMS	Apps	Display
18-24	6	3	1.5	4	7	1.5	1
25-34	4.8	3.5	3.9	5.1	5.9	5.3	2.6
35-44	4.9	3.8	4	5.8	6.2	5.1	4.1
45-54	4.1	3.5	3.5	5.2	6.0	5.1	3.6
55-64	4.9	3.5	3.6	5.8	6.4	6.3	4.5
>65	3.6	4.1	4.1	6.0	6.5	6.8	5.1

Age, education, interest (for energy), social aspects and so forth... matters!



Smart solutions for energy consumers

In strategic targets:

“Optimising user-friendly interfaces and apps [...]”

became

“Optimising user-friendly interfaces (including apps) [...]”

Instead of:

X (later determined to 5) energy apps in the market

we got

5 user-friendly interfaces/tools for energy management in the market



Thanks for listening!

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