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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 839509. The sole responsibility for the content of this presentation lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.



E1st in practice
or
What should I think
of when I hear this
buzzword?

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MAKING THE ENERGY EFFICIENCY FIRST PRINCIPLE



$$S = D$$

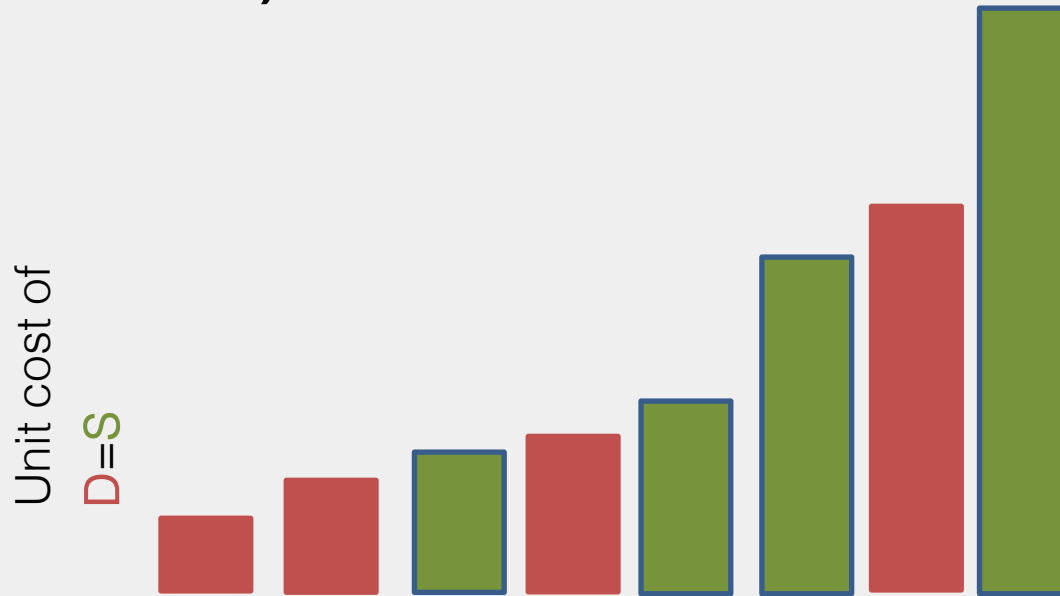
(Supply (Demand
))

- Not only in aggregate but also coincidentally
- S aligns with given D
- S means fuel availability AND infrastructure to deliver it

- D is not fixed:
 - Consumers have certain willingness to pay for energy and might be happy to limit/shift their demand
 - If they are given the chance



A (yet theoretical) commonsense



Note: order and magnitude are purely illustrative

Merit order of solutions to meet the energy demand:

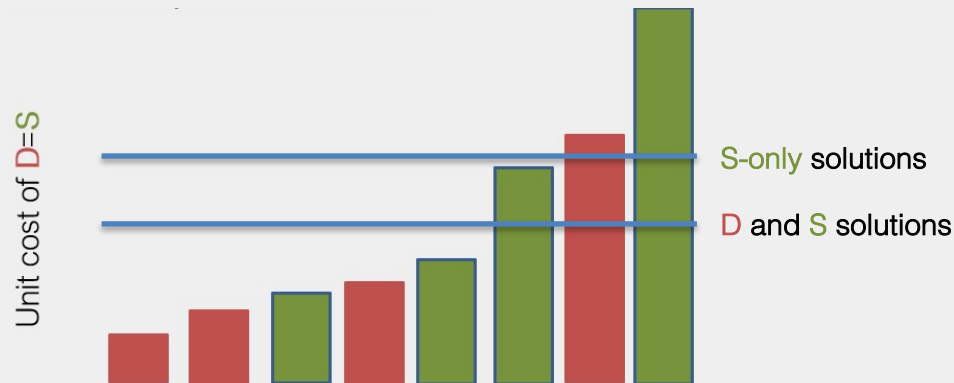
- demand-side resources
- supply-side resources



Barriers of equal treatment

- Mental: new, not reliable
- Structural: smaller units, multitude of actors, various technologies
- Regulatory: limited access to markets, biased incentives

- Result:

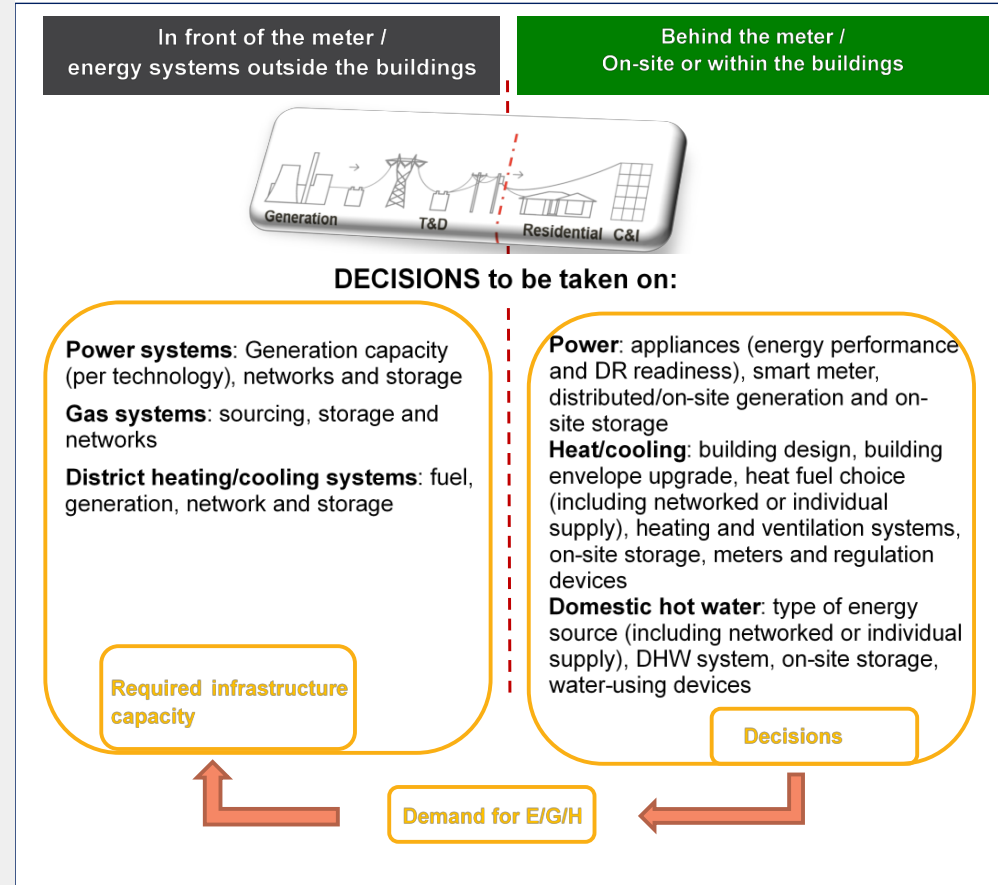


Efficiency First (E1st) is not just another name for energy efficiency.

*Efficiency First gives priority to demand-side resources whenever they are more cost effective from a **societal perspective** than investments in energy infrastructure in meeting policy objectives. It is a decision principle that is **applied systematically** at any level to energy-related investment planning and enabled by an **'equal opportunity' policy design**.*



Investment into what?



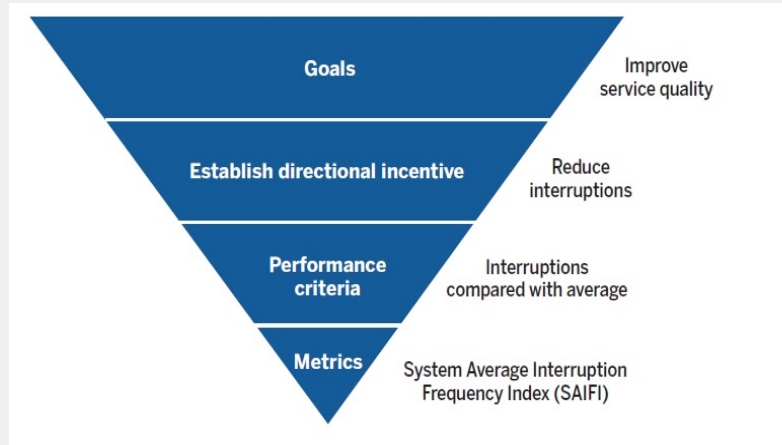
No.	Case
1.	Ecowatt programme (voluntary Demand Response through instant messaging)*
2.	Using ToU (Time-of-Use) tariffs to engage consumers and benefit the power system
3.	Social Constraint Management Zones to harvest demand flexibility
4.	Demand flexibility in District Heating networks
5.	FACE (French fund for rural electrification) allowing Demand-Side Management projects as an alternative*
6.	Participation of Demand Response (DR) in French wholesale electricity market
7.	Enabling rules for Demand Response (DR) aggregators
8.	Decoupling utility sales and revenues
9.	Energy Efficiency Obligation Schemes as a way to involve energy companies in behind-the-meter investments*
10.	Replacing a polluting power plant with behind-the-meter resources
11.	Updating distribution system planning rules in Colorado and Nevada
12.	Assessing the value of demand-side resources
13.	Water heaters as multiple grid resources
14.	Building Logbook – Woningpas: Exploiting efficiency potentials in buildings through a digital building file
15.	Optimising building energy demand by passive-level building code
16.	Energy Efficiency as infrastructure*
17.	Deferring T&D (Transmission & Distribution) infrastructure investments through local end-use efficiency measures
18.	Building energy performance requirements of the Irish Heat Pump System grant
19.	Fabric First approach under the Better Energy Communities grant scheme
20.	Linking RES (Renewable Energy Sources) support to building energy performance



Network company regulation or „How to incentivise network companies to use NWSs”?

- By removing disincentives
 - Decoupling revenue from kW distributed
 - Earning the same rate of return on types of expenditure

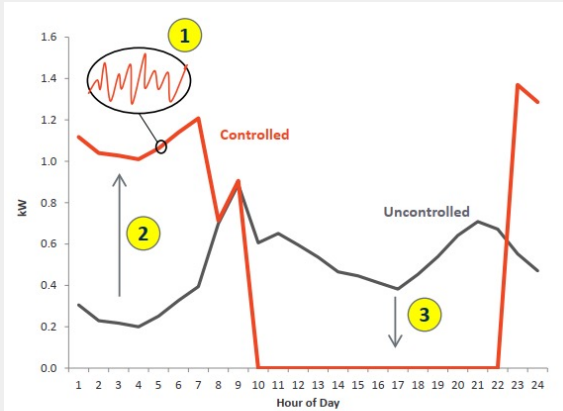
- By providing incentives: performance-based regulation



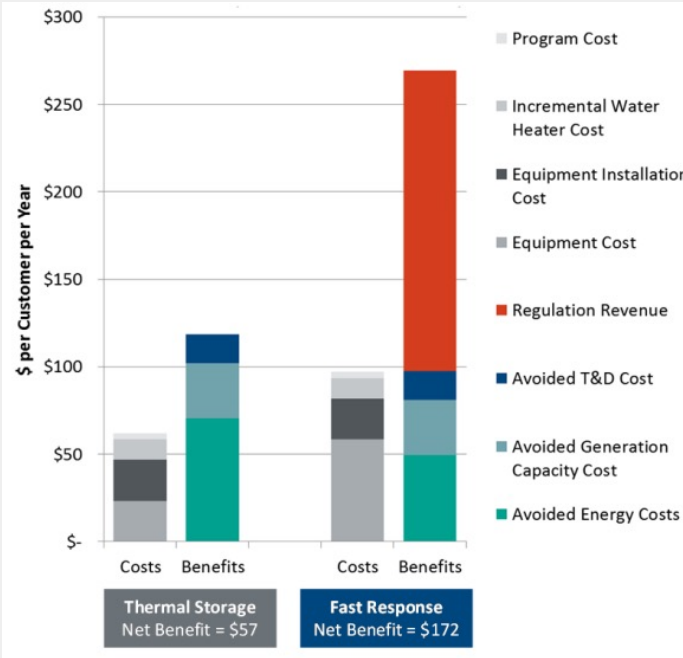
Source: Pató, Baker



Water heaters as power system resources



- 1 Heating element controlled with near-instantaneous response to provide **balancing services**
- 2 Off-peak **load building** to reduce wind curtailments or reduce ramping of thermal generation
- 3 **Peak demand reduction** to reduce need for generation capacity and/or T&D capacity, and to avoid peak energy prices



Source:
Chad
The
Brat



Linking RES support to building energy performance

- Lower FIT for PV if lower EPC in UK (2012-2019)
- Should apply to ANY public support for the energy supply infrastructure behind-the-meter such as:
 - Batteries
 - PV (net metering is a form of support as well!)
 - **Heat electrification !**
- Very relevant for the RFF and the Cohesion funds disbursement in the MSs





Thank you

Zsuzsanna Pató

Where to find the report:

<https://enefirst.eu/wp-content/uploads/D2-2-Report-on-international-experiences-with-E1st.pdf>

Where to find further examples:

<https://enefirst.eu/examples/>

Where to find our webinar:

<https://enefirst.eu/events/webinar-putting-efficiency-first-into-practice-insights-from-the-us-and-the-eu/>



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