INTERFLEX · NEXT IN FLEX 2026 · DAY 1

Learning from abroad

How other countries are scaling up residential flexibility, and what Belgian stakeholders can learn from it

Sam Hamels · Ghent University

FULL REPORT

This presentation is based on a deliverable of the InterFlex project (Task 3.1, D3.1.2), funded by the Energy Transition Fund of the Belgian federal government, managed by the FPS Economy, SMEs, Self-employed and Energy.

GHENT UNIVERSITY

economie

FPS Economy, S.M.E.s, Self-employed and Energy

Eight questions, sixteen countries

62 examples, and 12 recommendations for Belgium

CHAPTER 1
Network tariffs
Small effects, and politics steps in when bills jump

CHAPTER 2
Supplier contracts
A simple offer built around a device (car, battery, heat pump) scales

CHAPTER 3
Peak events
Devices that act on their own deliver far more

CHAPTER 4
Buying flexibility
Grid operators buy it routinely in Britain, still only trials elsewhere

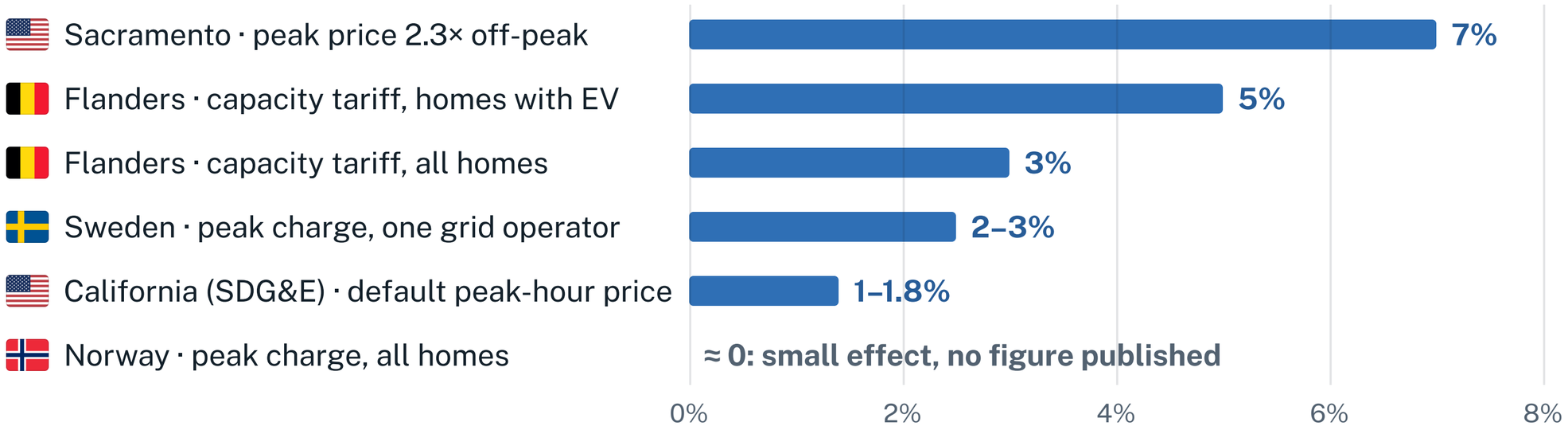
CHAPTER 5
Required control
Rules that make devices steerable work where the wiring already exists

CHAPTER 6
The solar peak
Solar can be made controllable with a tiny financial impact

CHAPTER 7
Market access
On its own, simply giving aggregators market access brings little volume

CHAPTER 8
Data and standards
What matters is whether data actually gets to where it needs to be

Do new network tariffs really lower household peaks?



Measured cut in household peak load after the tariff started. Capacity tariff and peak charge: a network fee based on your own highest power use. Peak-hour price: a higher price per kWh in peak hours (California: retail rate, energy and network together).

BELGIAN LESSON

Build an evaluation into every new network tariff, with meter data and a survey.

What if a new network tariff makes bills jump?

Slovenia



>200%

higher network bills for households with solar panels after a new tariff in October 2024; parliament passed an emergency law within weeks

Sweden



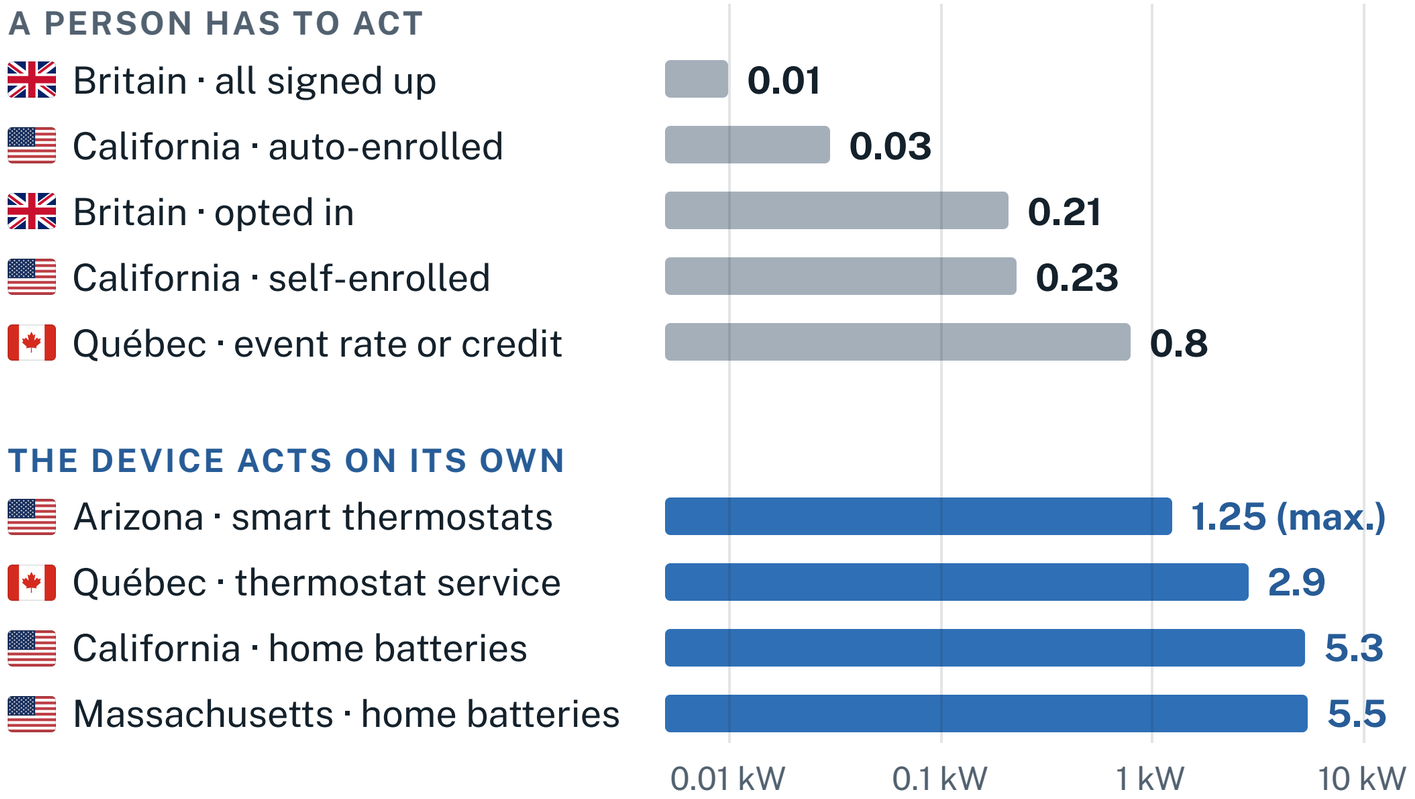
< 10 months

before the deadline, in March 2026, the government stopped the obligation for grid companies to introduce a peak charge (a fee based on your highest power use)

BELGIAN LESSON Publish who pays more and who less before a new tariff starts, and phase in the change.

A tariff reform does not raise what a grid operator collects in total; it changes who pays how much.

Who acts: you or your device?



Average cut per household per peak event (a short, announced moment of scarcity), in kW. Logarithmic scale: each gridline is ten times the previous. Arizona: utility maximum.

A PERSON HAS TO ACT

0.01–0.8 kW

per household, per event

THE DEVICE ACTS

About 1–5 kW

per household, per event

BELGIAN LESSON

Sell the device together with the service that steers it: on by default, with an easy override.

Is a better price enough to make households shift?

A PRICE ON ITS OWN: LITTLE RESPONSE

Spain



27.4%

of Spanish households are on a default hourly tariff; they behave the same as households on fixed prices

California



–1.0 to –1.8%

cut in peak use after households were moved by default to a time-of-use price (higher in peak hours)

A DEVICE THAT STEERS: GROWING

Britain



497,000 → 835,000

households on smart time-of-use tariffs*, July 2024 to July 2025

Nearly 9 in 10

of the extra households came from car tariffs*: +84% in a year, against +27% for other smart tariffs*

BELGIAN LESSON

Expect little from default hourly prices; suppliers could make steering itself the product.

* "Smart time-of-use tariffs" are in the regulator's count of contracts, but it is not clearly defined. Car tariffs, which drive the growth, are about handing over control: the supplier decides when the car charges, within the limits the driver sets. Other smart tariffs may not involve any control.

Can you simply require devices to be steerable?

It works where the wiring is already there.

FRANCE	**11 million+**	households: cheap hours in the grid tariff (not the energy price) partly move to the afternoon by one decision; water heaters on the meter switch follow
GERMANY	**4.2 kW**	minimum power that always stays available when the grid operator dims a new heat pump or charger (although: only 5.9% of metering points currently have the smart meter that is needed to do this)
UTRECHT	**–49.5%**	lower load at 7 pm at 3,500 public chargers turned down 4–9 pm, vs the expected load without control (late Feb 2026)
BRITAIN	**≈ £40**	estimated extra manufacturing cost per new home charger for off-peak defaults and a random start delay; effect not yet measured

BELGIAN LESSON

Germany’s approach could serve as a safety net; future charger incentives could require off-peak defaults and a random start delay.

Can we cope with the midday solar surplus?

Three ways to cap solar export when the grid is full, built into new inverters.

1 · FIXED CAP



Germany: new rooftop systems above 2 kW may export at most

60%

of their capacity, until a control box lets the grid operator turn them down remotely

2 · VARIABLE LIMIT



South Australia: a low fixed export limit, or a flexible one the network operator resets every 15 minutes

99.4%

of the time the flexible limit stayed at its maximum; nearly 9 in 10 new customers choose it

3 · LAST-RESORT SWITCH



Australia: in a grid emergency, new inverters can be switched off remotely

$1–2

lost solar output per household per switch-off (Western Australia estimate), no compensation; used once in South Australia

BELGIAN LESSON

Require every new inverter to accept an external export limit over an open standard.

So what should Belgium do?

1

REGULATORS AND GRID OPERATORS

Publish who pays more and who less before a new network tariff starts; then continually evaluate it.

2

GOVERNMENTS

When you give energy-crisis support, keep the incentive to avoid expensive hours intact.

3

SUPPLIERS AND AGGREGATORS

Sell control as the product: on by default in a contract the customer chooses, with an easy override.

4

GOVERNMENTS

Require chargers to default to off-peak hours with a random start delay; heat pumps to heat hot water at midday.

5

GRID OPERATORS

Publish, per congested grid point, the price up to which buying flexibility is cheaper than reinforcing the grid.

6

REGULATORS

Measure what moves: track time-of-use and device-based contracts, show bill effect of shifting in price comparison tools like the V-test, and publish prices in one machine-readable format.

Read the full report

Learning from abroad: 62 examples from sixteen countries, and twelve recommendations for Belgium

https://epes.ugent.be/research/InterFlex/documents/D3.1.2%20Learning%20from%20abroad.html

Scan or click to read the full report

GHENT UNIVERSITY

economie

FPS Economy, S.M.E.s, Self-employed and Energy

This presentation is based on a deliverable of the InterFlex project (Task 3.1, D3.1.2 — “Report on international lessons learned”), funded by the Energy Transition Fund of the Belgian federal government, managed by the FPS Economy, SMEs, Self-employed and Energy.

FOR QUESTIONS

Backup slides

Can grid operators buy household flexibility? Does market access bring household flexibility?

Can grid operators buy household flexibility?

Routine in Britain, still trials elsewhere; it buys time before reinforcement.

9 GW

of flexibility under contract with British local grid operators in 2024

22 GWh

of flexibility actually used that year: only about two and a half hours at the full 9 GW

23%

of the flexible capacity at Britain's largest local flexibility market came from households (2024/25)

BELGIAN LESSON

Publish, per congested point, the price up to which flexibility is cheaper than reinforcement; complete the extension of FlexHub (the register of which provider serves which connection).

Does market access bring household flexibility?

Little household volume, and income from reserves (capacity kept on standby for the grid operator) fades fast once batteries rush in.

20 MW 

pooled from about 5,000 home solar-and-battery systems in New England, five years after a US federal order opened wholesale markets to them

80–90% 

fall in Swedish reserve prices within three years once batteries rushed in

60–72% 

fall in Belgian reserve prices (frequency containment and automatic reserves), 2024 to 2025

BELGIAN LESSON

Build home-battery offers on several sources of income, with savings on the household's own bill as the foundation.