

MIT Electric Power Systems (EPS) Center
Navigating the Complex Transition Towards Tomorrow's Power System

Crisis del mercado energético de la Unión Europea

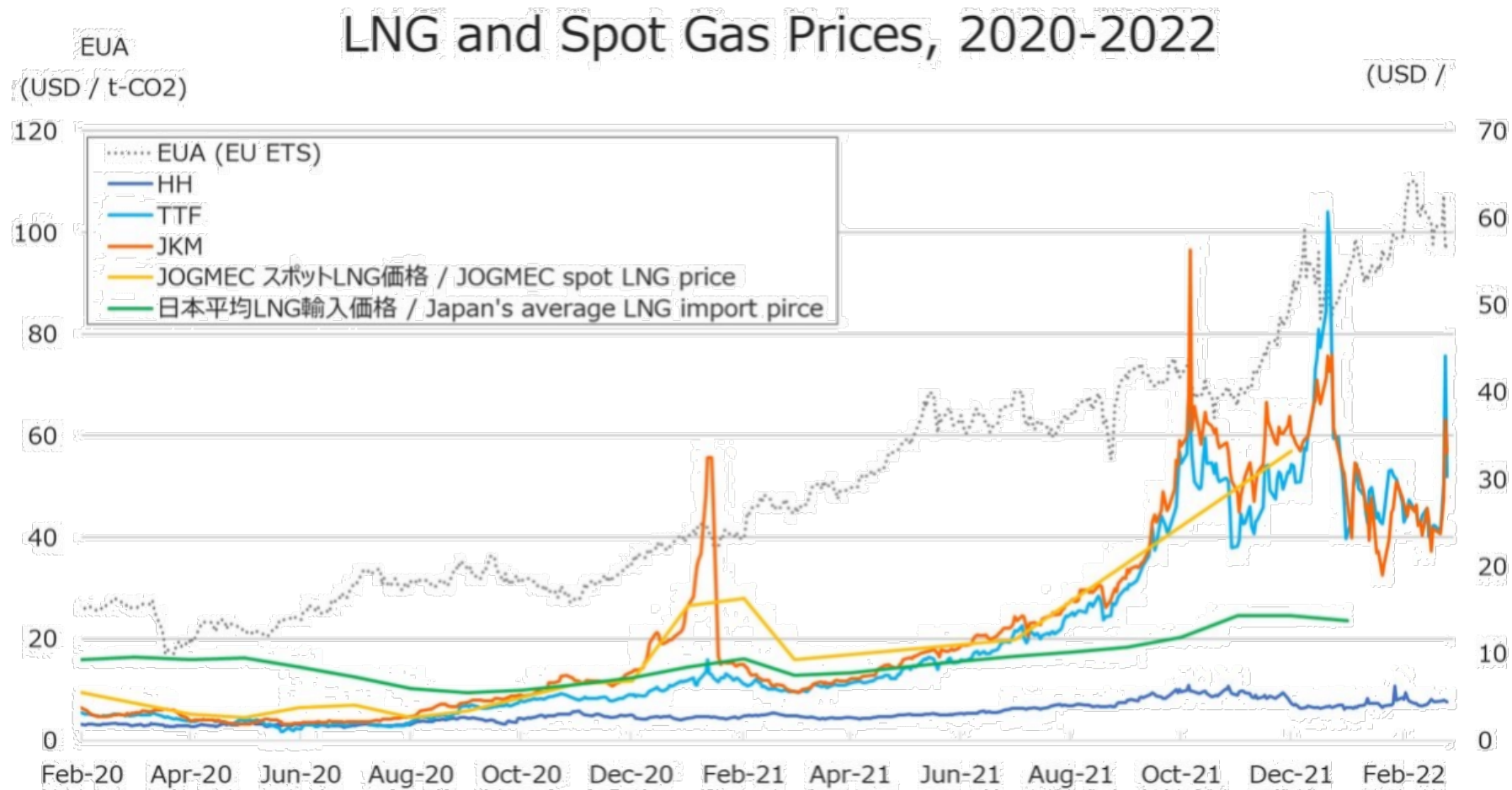
Relato y lecciones que debieran aprenderse

Prof. Carlos Batlle
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Spoiler: Electroshock and therapy for the future

Diagnosis: this is a gas price crisis ...

... and a failure of long-term energy markets



Spoiler: Electroshock and therapy for the future Prescription (?)

- Defibrillator

- Current gas prices
- Secondary effects and sequels



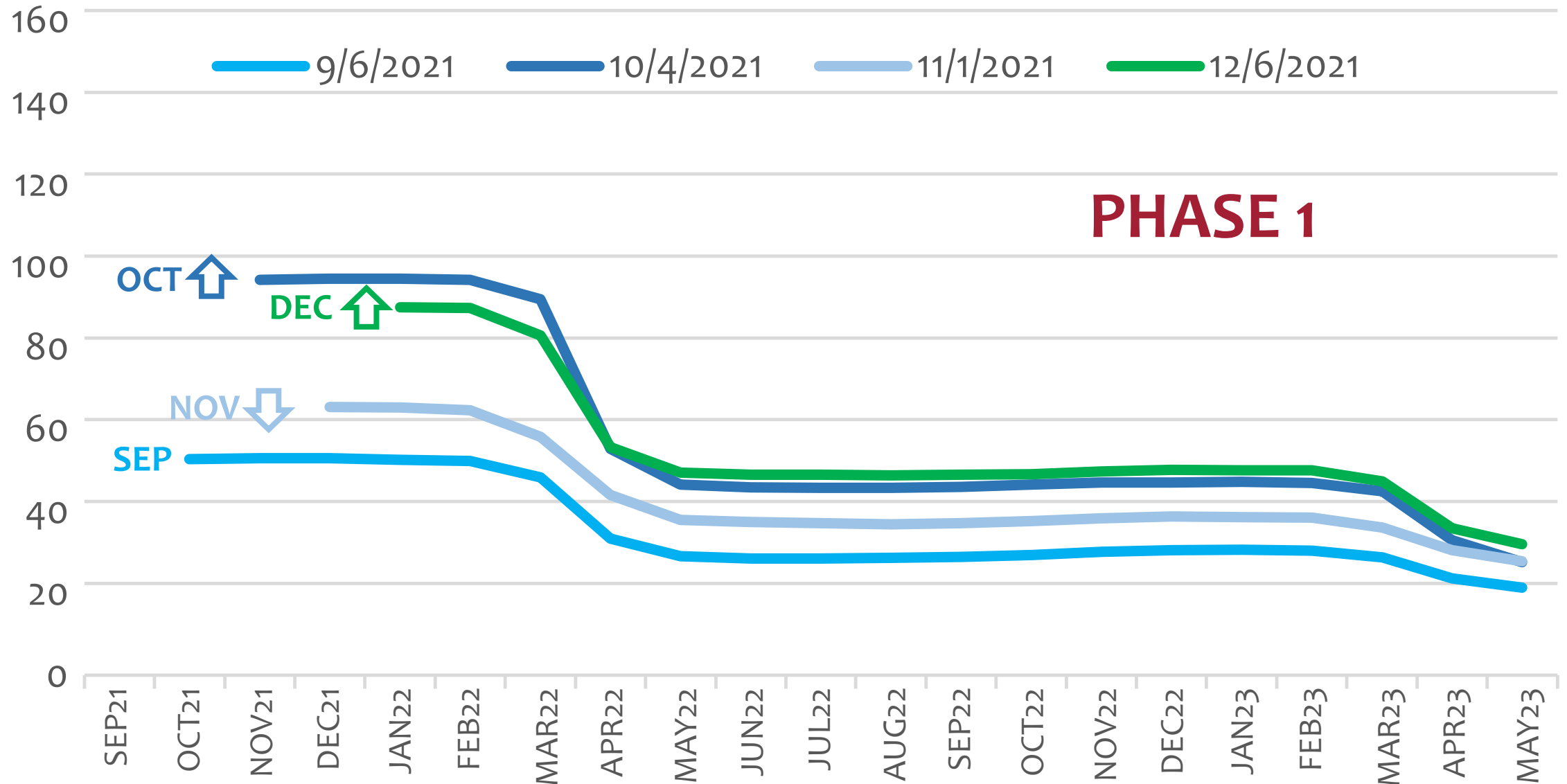
- Post-recovery therapy



- Fixing long-term markets
- Without ruining short-term ones

First and foremost ... conditioning the regulatory agenda

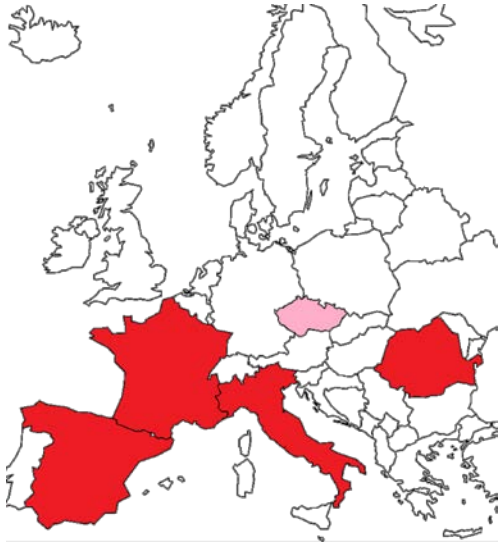
Own elaboration with data taken from theice.com



Phase 1

What was said and done

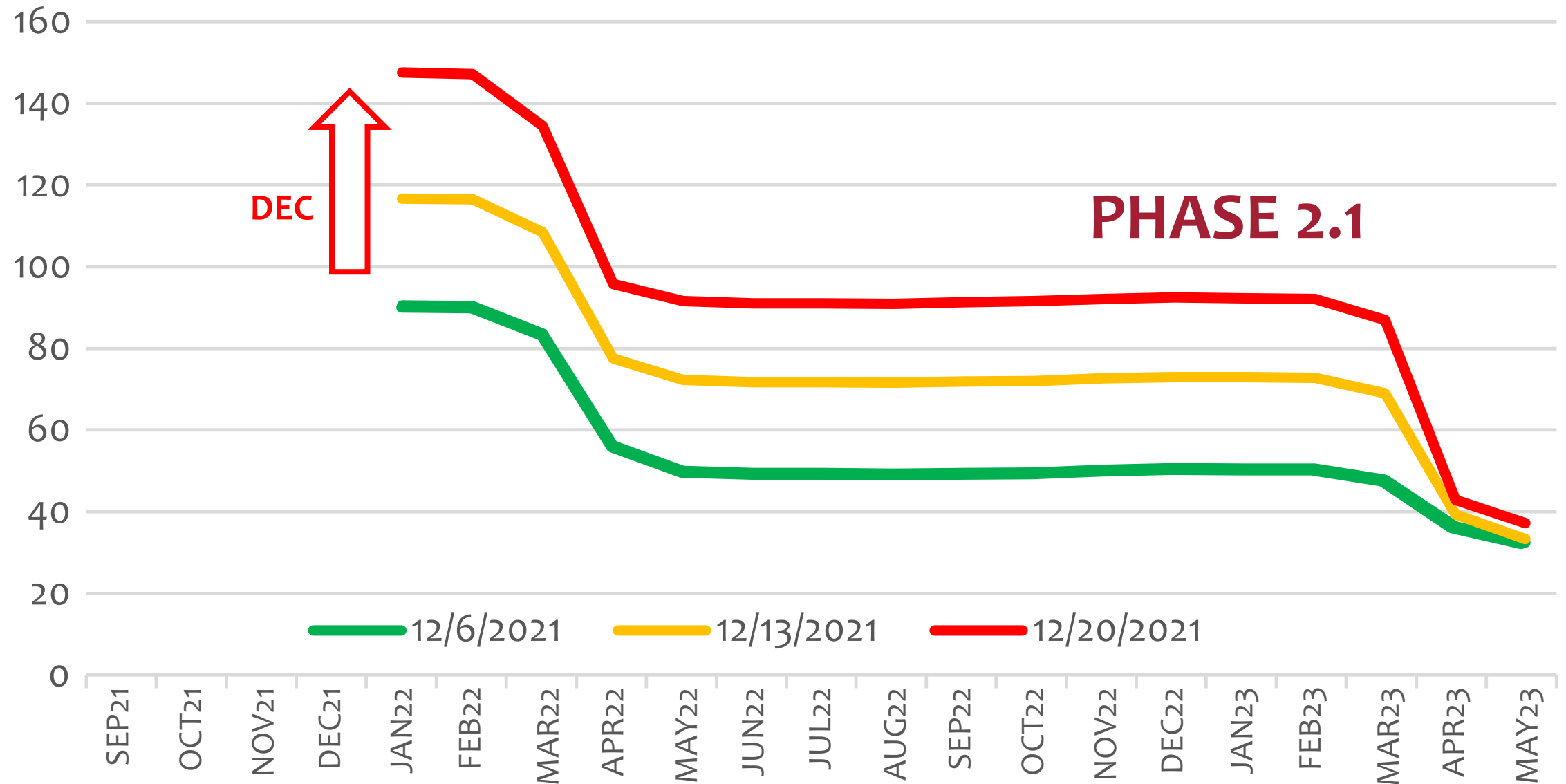
Average (cost-based)
not short-term
market prices!



Everything works
well!

First and foremost ... conditioning the regulatory agenda

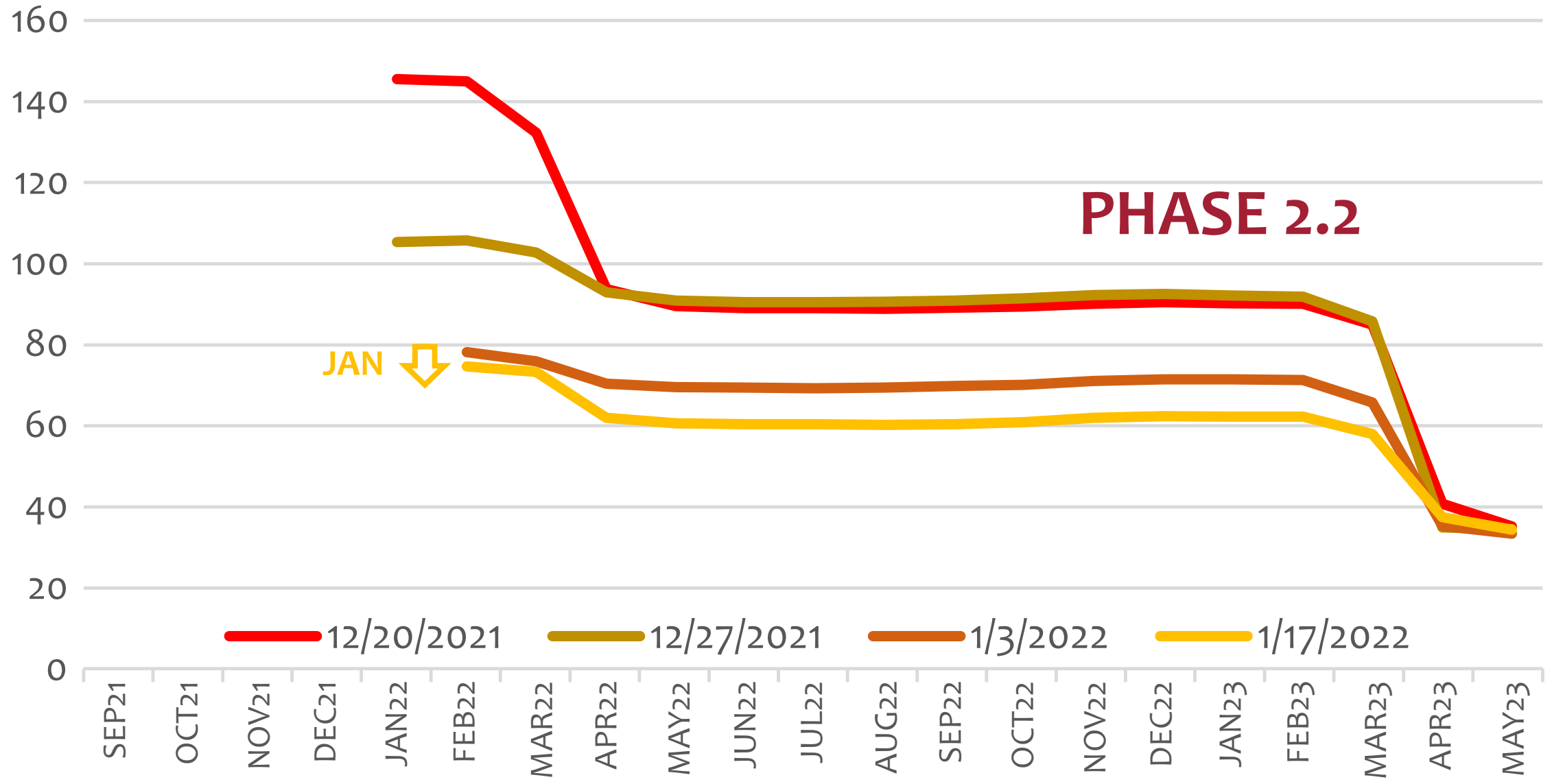
Own elaboration with data taken from theice.com



First and foremost

... conditioning the regulatory agenda

Own elaboration with data taken from theice.com



Analysis after the initial symptoms



RESEARCH ∨ EDUCATION ∨ PEOPLE MEMBERSHIP ∨ NEWS & EVENTS ∨ ABOUT ∨



WORKING PAPERS

Power price crisis in the EU: Unveiling current policy responses and proposing a balanced regulatory remedy

FEBRUARY 2022

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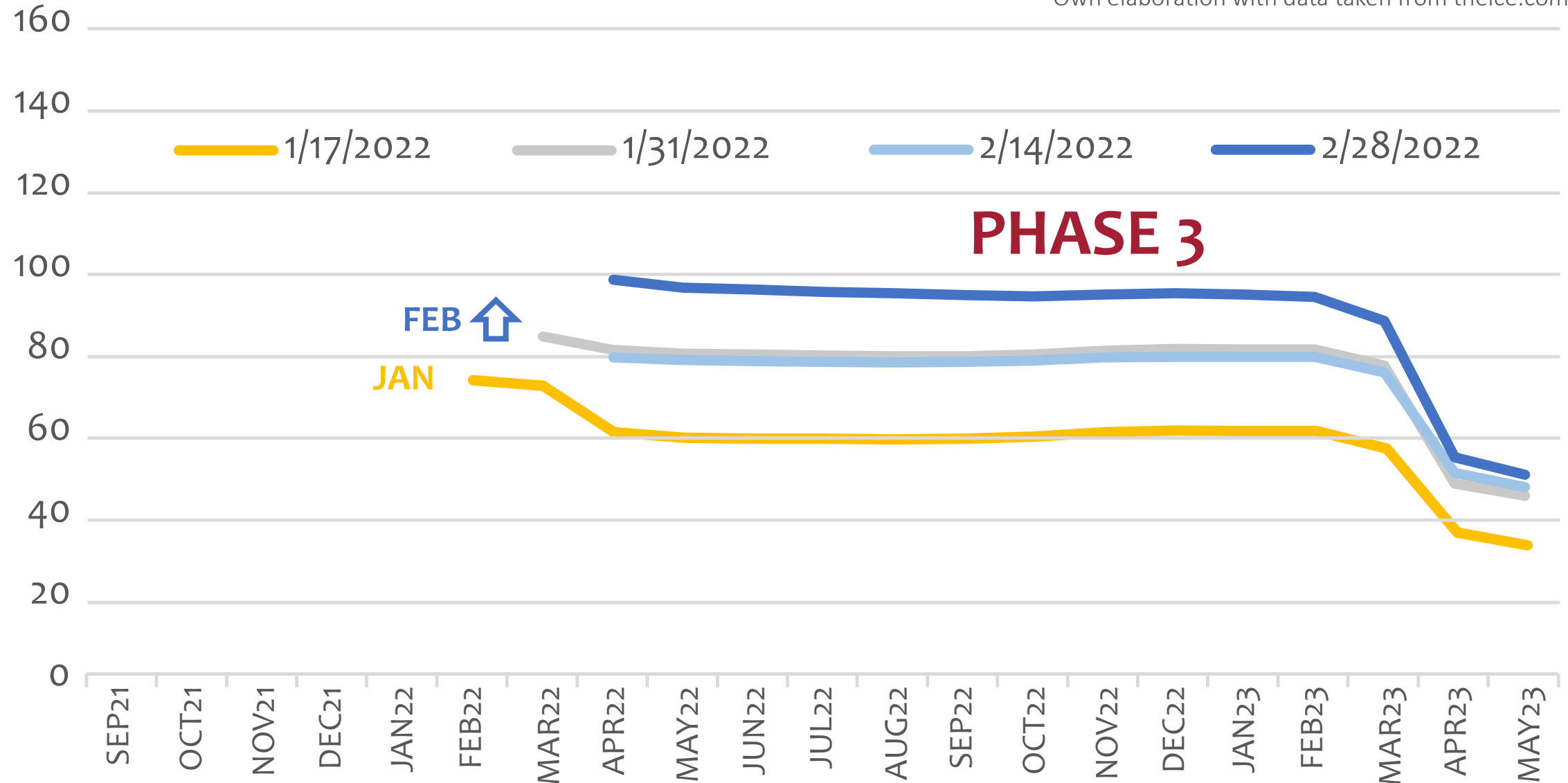


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First and foremost ... conditioning the regulatory agenda

Own elaboration with data taken from theice.com

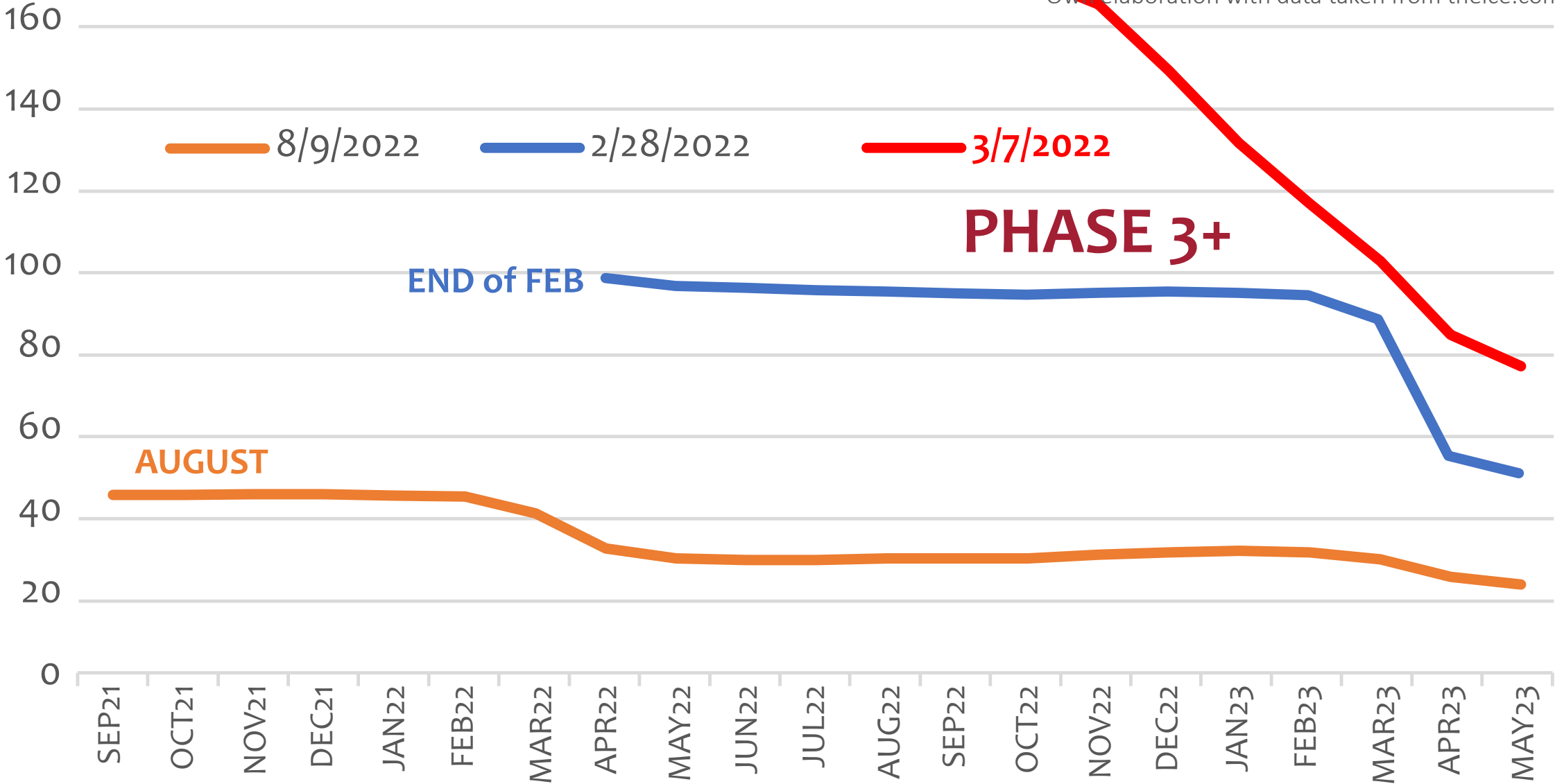


First and foremost

MARCH

... conditioning the regulatory agenda

Own elaboration with data taken from theice.com



Time for regulation



8.3.2022

REPowerEU

I have spoken!

Regulated
rates
Capture of
“windfall
profits”

*Ok, but now...
which is the way?*



Journalism and context


Es noticia | Guerra Ucrania Rusia últimas noticias • Huelga transportes • Desabastecimiento • Carlos Alcaraz • Covid • Abramovich • Sorteo Champions • Netflix • Acogida niños Ucrania • Miss Mun

EL MUNDO ESPAÑA OPINIÓN ECONOMÍA INTERNACIONAL DEPORTES CULTURA LOC TELEVISIÓN MENÚ ≡

Suscríbete | Iniciar sesión

← Economía

**ACTUALIDAD
ECONÓMICA**

 PREMIUM

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Actualizado Domingo,
13 marzo 2022 - 02:32



CONTRAOPA • Opinión 

Un informe del MIT en EEUU pone al Gobierno de ejemplo de lo que no hay que hacer en energía

El instituto de referencia internacional en materia energética recomienda asegurar inversiones en las renovables evitando el modo en que el Gobierno ha intentado intervenir hasta ahora en el sector



First best or extreme unction?

- Paneuropean gas market price cap
 - For example, Kneuhoff et al.

Non-paper, 14.03.2022

Proposal for Emergency EU Action to Stabilise Energy Markets and Protect Consumers:

Commit now to cap gas prices in case of physical supply interruption

Summary: European gas prices are now higher than necessary, as market participants are paying over the odds to insure against the even higher prices they fear will come with a potential interruption to Russian supplies. This harms European consumers and industry, and benefits gas producers including Gazprom. The EU can stop this vicious spiral by committing now to cap prices if supply is interrupted. This note explains why this is needed, and how it can be done.

Measures on power: secondary effects

- Mandated bilateral contracts for restricted demand
 - Welfare losses and cross subsidies
- “Negotiated” or auctioned currently long-term contracts
 - *Penny wise, pound foolish*
- Technology-targeted market price caps
 - Dispatch (hydro, coal/gas, power/gas) and cross-border trading interferences
 - Alternative: subsidizing CCGT fuel price [idem]
- Captures of infra-marginal rents [idem]

Electroshock

Betting tough

≡ POLÍTICA ENERGÉTICA RENOVABLES ALMACENAMIENTO HIDROGÉNO DIGITALIZACIÓN MOVILIDAD OPINION

España y Portugal trabajan para topar el precio de la electricidad en los 180 €/MWh

El ahorro de una medida de este calado alcanzaría los 4.600 millones para España y 1.100 millones para Portugal

16/03/2022 · Redacción

el periódico
de la energía



Sánchez y Costa se dan la mano en una cumbre hispano lusa. FOTO: Moncloa.

And retailing?

- Did it actually hedge?

Tabla 16. Precios medios finales (€/MWh) según el tipo de consumidor (Incluido Impuestos) según información de facturación declarada por las comercializadoras

AÑO	Doméstico P≤10 kW PVPC(*)	Doméstico P≤10 kW Mercado libre	Doméstico P>10 kW Mercado libre	PYME Mercado libre	Industrial Mercado libre
2015	237	258	252	187	115
2016	215	255	246	175	104
2017	236	259	247	170	107
2018	240	266	251	173	113
2019	224	271	257	179	112

Fuente: CNMC

(*) Consumidor medio con consumo anual de 2,5 MWh y potencia contratada de 4,2 kW en peaje de acceso 2.0A y consumo anual de 2,9 MWh y potencia de 4,6 kW en peaje de acceso 2.0 DHA, ponderados considerando un consumo del 80% para peaje de acceso 2.0A. Datos de consumo de acuerdo con Circular 2/2005. Datos de potencia de acuerdo a liquidaciones de peajes aportados por las distribuidoras a esta Comisión (SINCRO).

- Bankruptcies and the role of the supplier of last resort
- Guarantees and competition
 - Vertical integration

Power price crisis in the EU: Unveiling current policy responses and proposing a balanced regulatory remedy

Carlos Batlle, Tim Schittekatte & Christopher R. Knittel

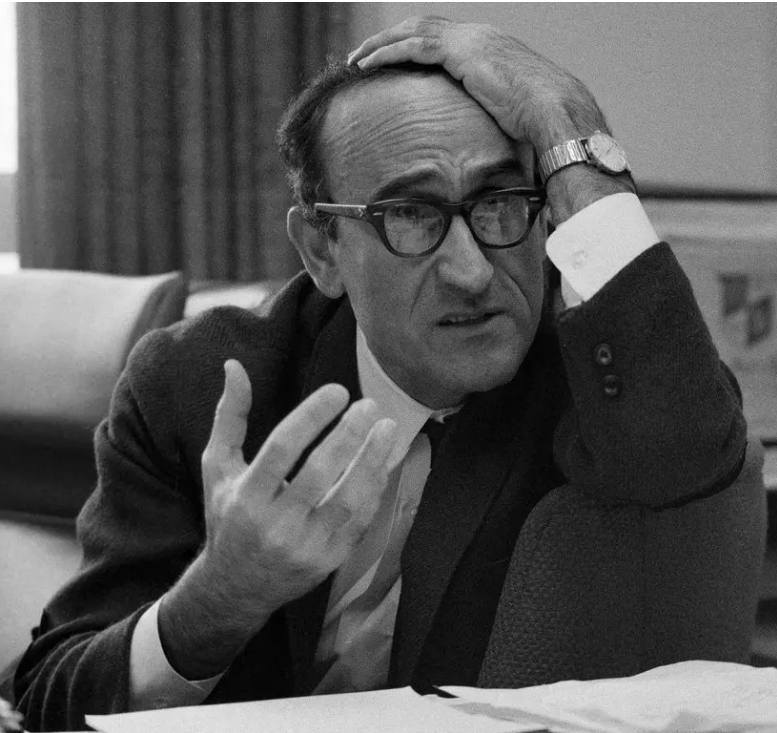
February 25th, 2022

Not for Public Distribution

Second-best

What if first-best is considered insufficient?

“A good mix of regulation
and markets is better
than no market at all”
(Alfred E. Kahn, 1988)



“I've abandoned free-
market principles to save
the free-market system”
(George W. Bush, 2008)



Potential measures for the future

- **RES auctions as unique entry gate**
 - Limiting access to the network to RES auction winners
- **Mandatory long-term market makers**
 - Taking advantage of vertically integrated utilities
- **Affordability options**
 - Regulatory-driven hedge against and only “extreme events”
- **Reconsidering the role of retail**
 - Well-designed default rates

Prescription for the future

An alternative regulatory solution to
complete the market mechanism

Stability... better **Affordability** options

An alternative regulatory solution to complete the market mechanism

Missing long-term market



— Products and Units —

EEX GERMAN POWER FUTURE

▼

2022-01-21

Day Weekend Week Month Quarter Year

Baseload

Name	Last Price	Last Volume	Settlement Price	Volume Exchange	Volume Trade Registration	Open Interest
Cal-23	124.00	8,760	122.63	2,592,960	2,540,400	45,897
Cal-24	92.30	8,784	92.13	597,312	1,168,272	11,410
Cal-25	87.95	17,520	87.00	70,080	271,560	2,505
Cal-26	-	-	84.38	-	35,040	198
Cal-27	-	-	83.09	-	-	96
Cal-28	-	-	81.87	-	-	30
Cal-29	-	-	81.40	-	-	-
Cal-30	-	-	80.59	-	-	-
Cal-31	-	-	79.73	-	-	-

EEX FRENCH POWER FUTURES

▼

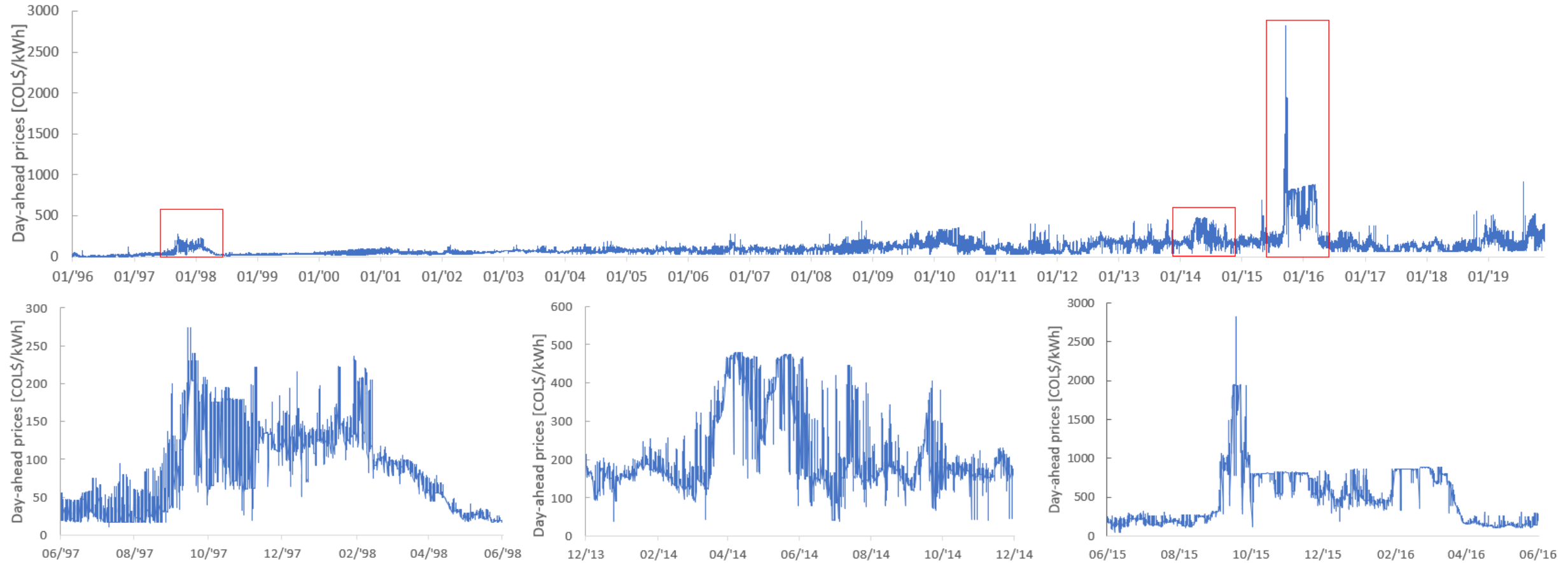
2022-01-21

Day Weekend Week Month Quarter Year

Baseload

Name	Last Price	Last Volume	Settlement Price	Volume Exchange	Volume Trade Registration	Open Interest
Cal-23	131.35	8,760	131.34	8,760	122,640	5,908
Cal-24	-	-	95.54	-	-	599
Cal-25	-	-	91.43	-	-	92
Cal-26	-	-	-	-	-	-
Cal-27	-	-	86.08	-	-	1
Cal-28	-	-	-	-	-	-

Learning from the pioneers



An alternative regulatory solution to complete the market mechanism

“Bill shock” safeguard mechanism

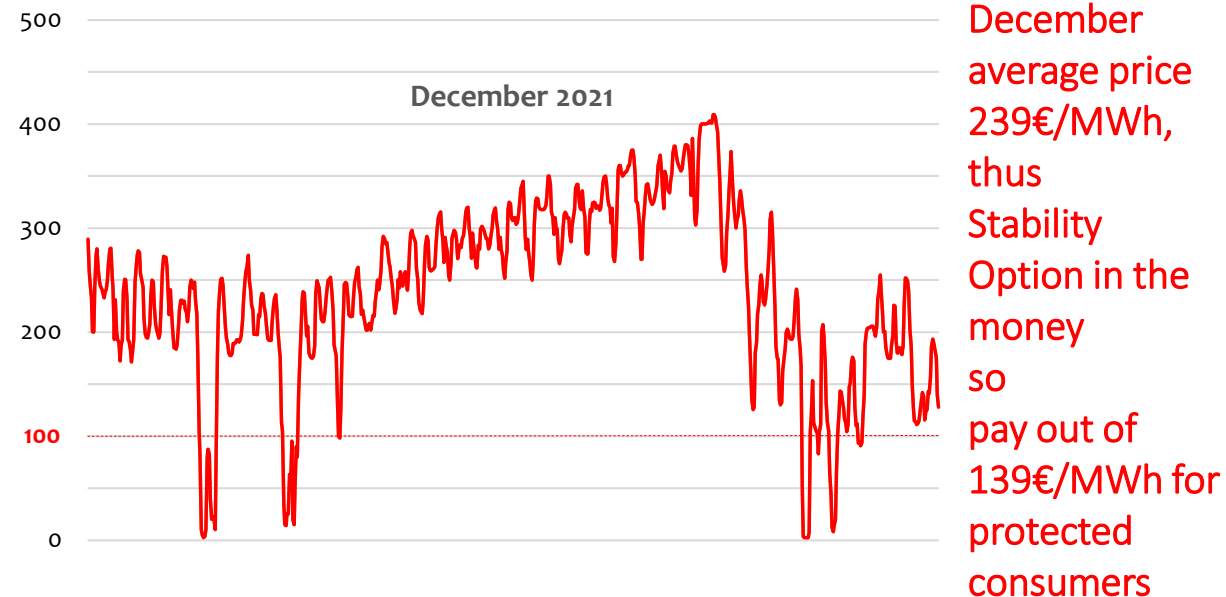
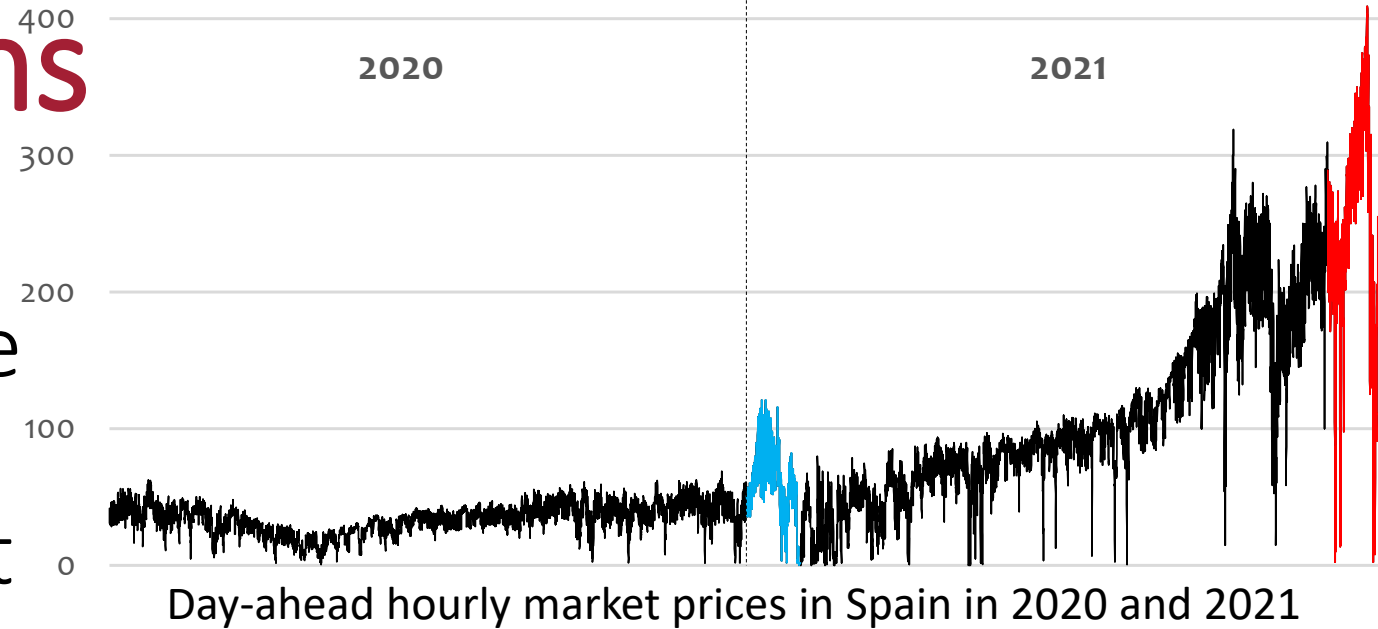
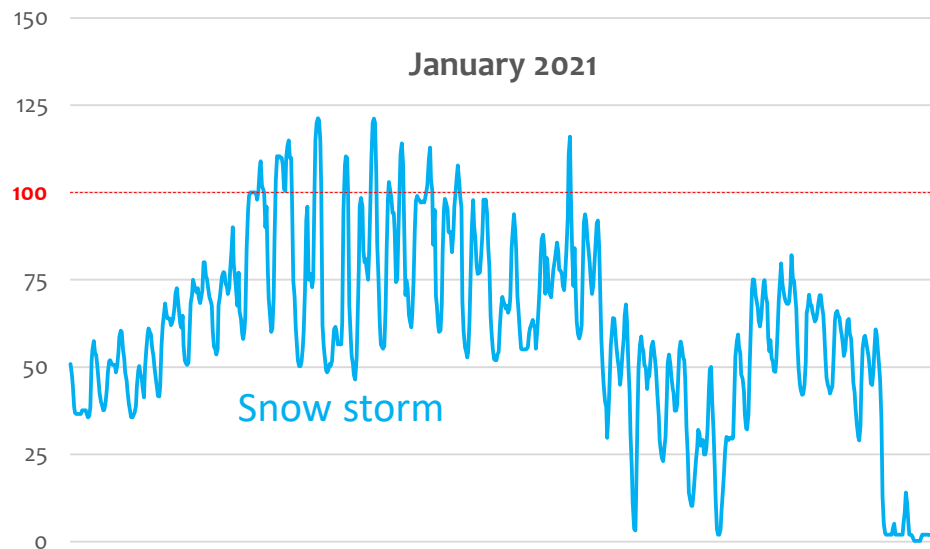
- Centralized (regulatory-led) auction for the procurement of a financial hedge termed as “affordability options”
 - Objective: affordability
 - Procured on behalf of consumers deemed to need protection (default, opt-out & opt-in possible)
- Main principles
 - Competitive, technology agnostic procurement
 - No interference with dispatch and short-term price signal for consumers (e.g., scarcity prices)

An alternative regulatory solution to complete the market mechanism

Affordability options

- Illustrative example
 - Differential impact of the option depending the nature of the price event

51 hours with prices above 100€/MWh, but January average price 60€/MWh, thus Stability Option not exercised



An alternative regulatory solution to complete the market mechanism

Stability options – Affordability options

- Asian call option

- Derivative with a payoff at maturity that depends on an average of the underlying on a set of predetermined monitoring dates (monthly)

<i>General characteristics</i>	
Product	Financial call option
Buyer	Central entity on behalf of (a subset of) consumers
Seller	Any generator (existing or new) - technology agnostic but physical and/or financial backup required (e.g., gas contract)
Cost allocation option premium	Via a levy in the electricity bill (similar as the cost of RES auctions is managed), spread over the consumers under protection.
Pay-out exercised options	Electricity bill reduction for the end-users “covered” by the stability options = $\max [0, \sum_{h \in \text{Settlement period}} (DA_price_h - Strike_price) * Contracted_volume_h]$ ²⁵

An alternative regulatory solution to complete the market mechanism

“Bill shock” safeguard mechanism

- Low strike price (representing bill cap), and monthly settlement
 - Strike is the average monthly price
 - It adapts well the risk profile of variable RES and the hedging needs of end users
- 5-10 years duration
- Time lag to allow for competition (new investments)
 - e.g. 2023-2028

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