

POWER CRISIS RESPONSE IN JAPAN

September 28, 2022

OGAWA Kaname

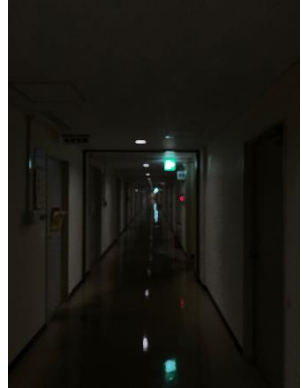
Director, Electricity Infrastructure Division
Agency for Natural Resources and Energy

Power Crises in 2022

March 22

- Powerful earthquake a week earlier *over 2m power outage
→ Decrease in power supply capacity by 6GW
- Unusually low temperature with cold rain and snow
→ Largest demand (48GW) in March since 2010

➡ Power crunch alert for the first time



June 27 - 30

- Maintenance period ahead of a peak demand in summer
→ 6GW of generation capacity out of operation
- Record-breaking high temperature of 35°C or more
→ Largest demand (52GW) in June since the 2000s

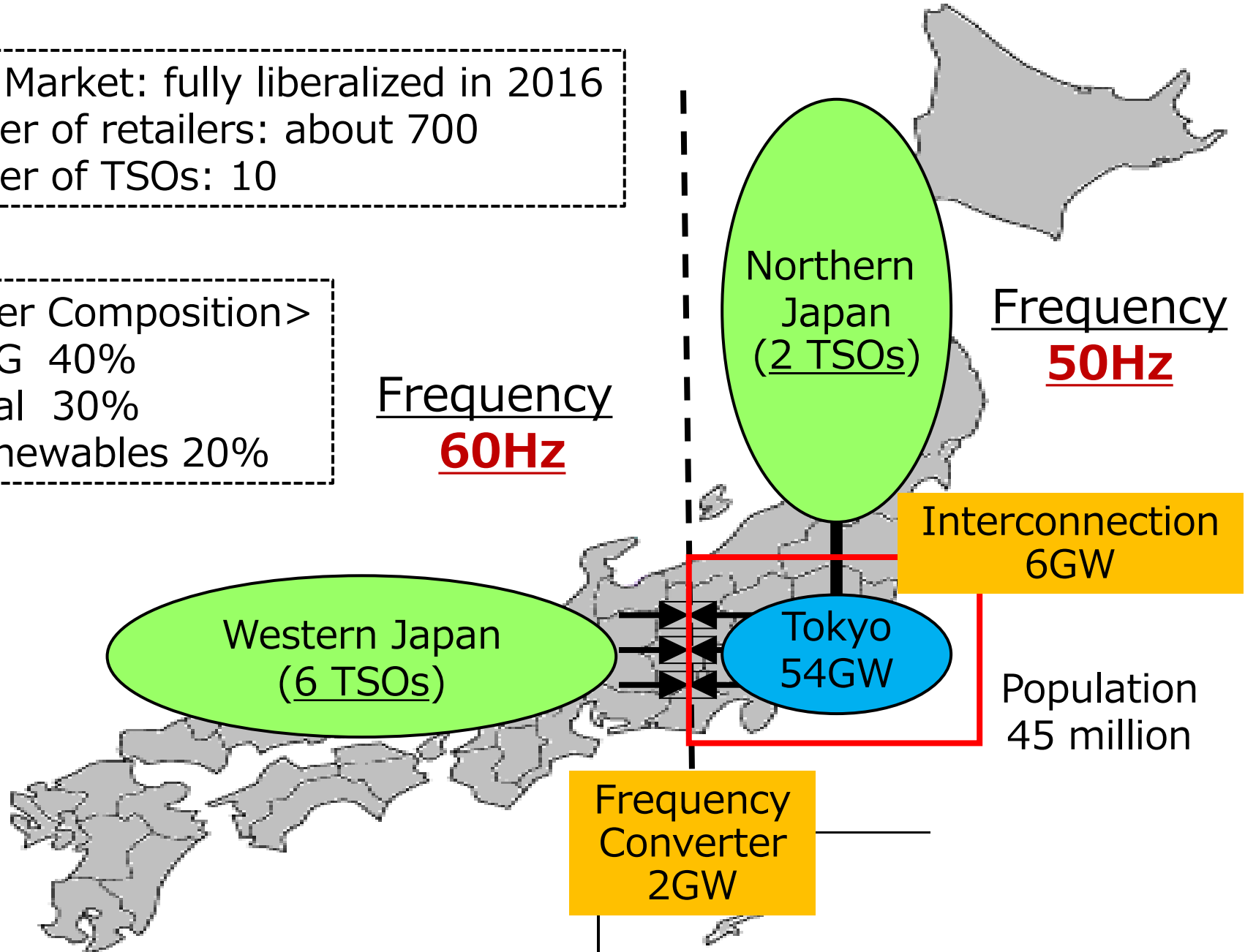
➡ First power crunch advisory lasted for a week

Background① Grid Constraints

Retail Market: fully liberalized in 2016
Number of retailers: about 700
Number of TSOs: 10

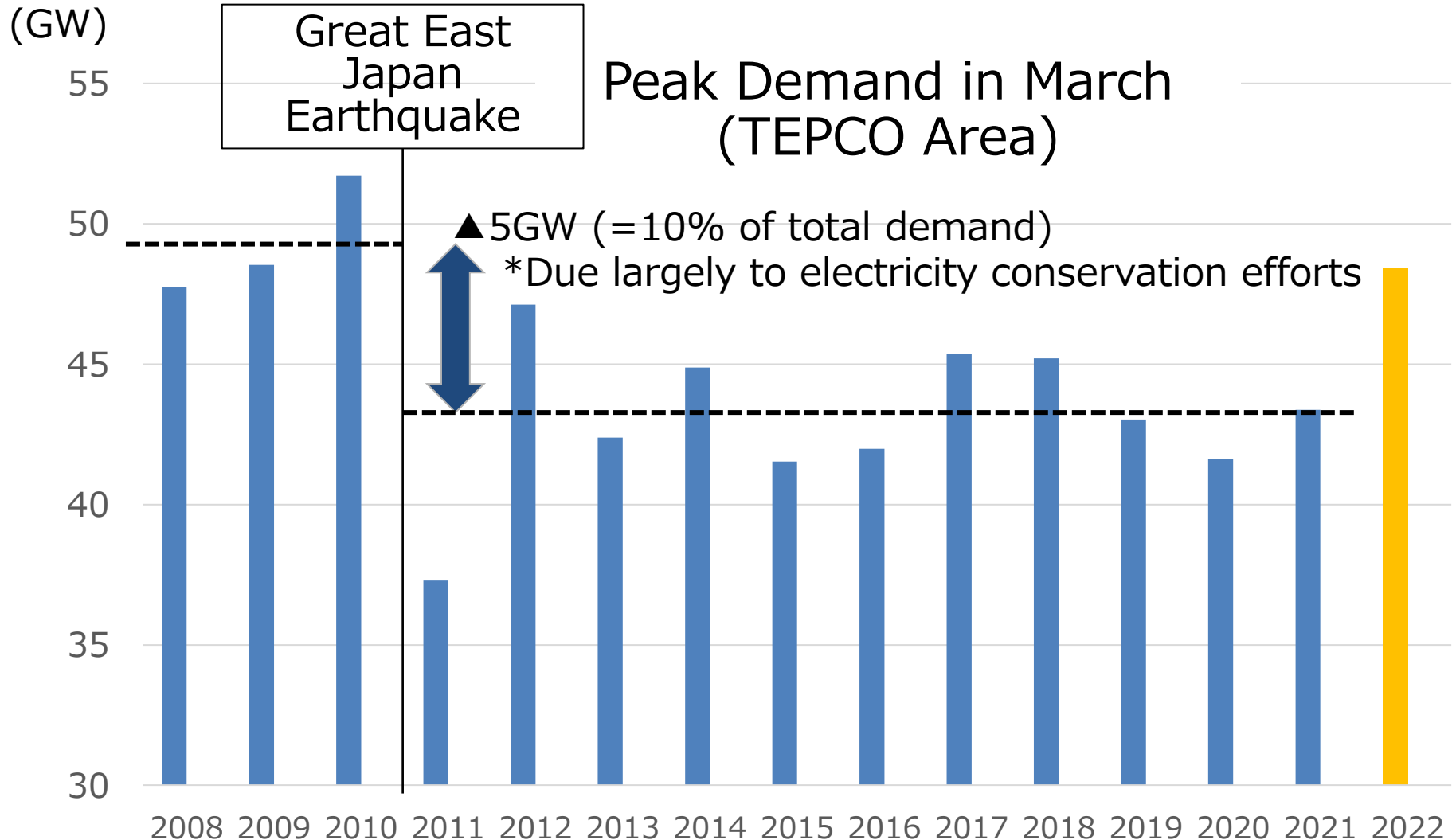
<Power Composition>

- LNG 40%
- Coal 30%
- Renewables 20%

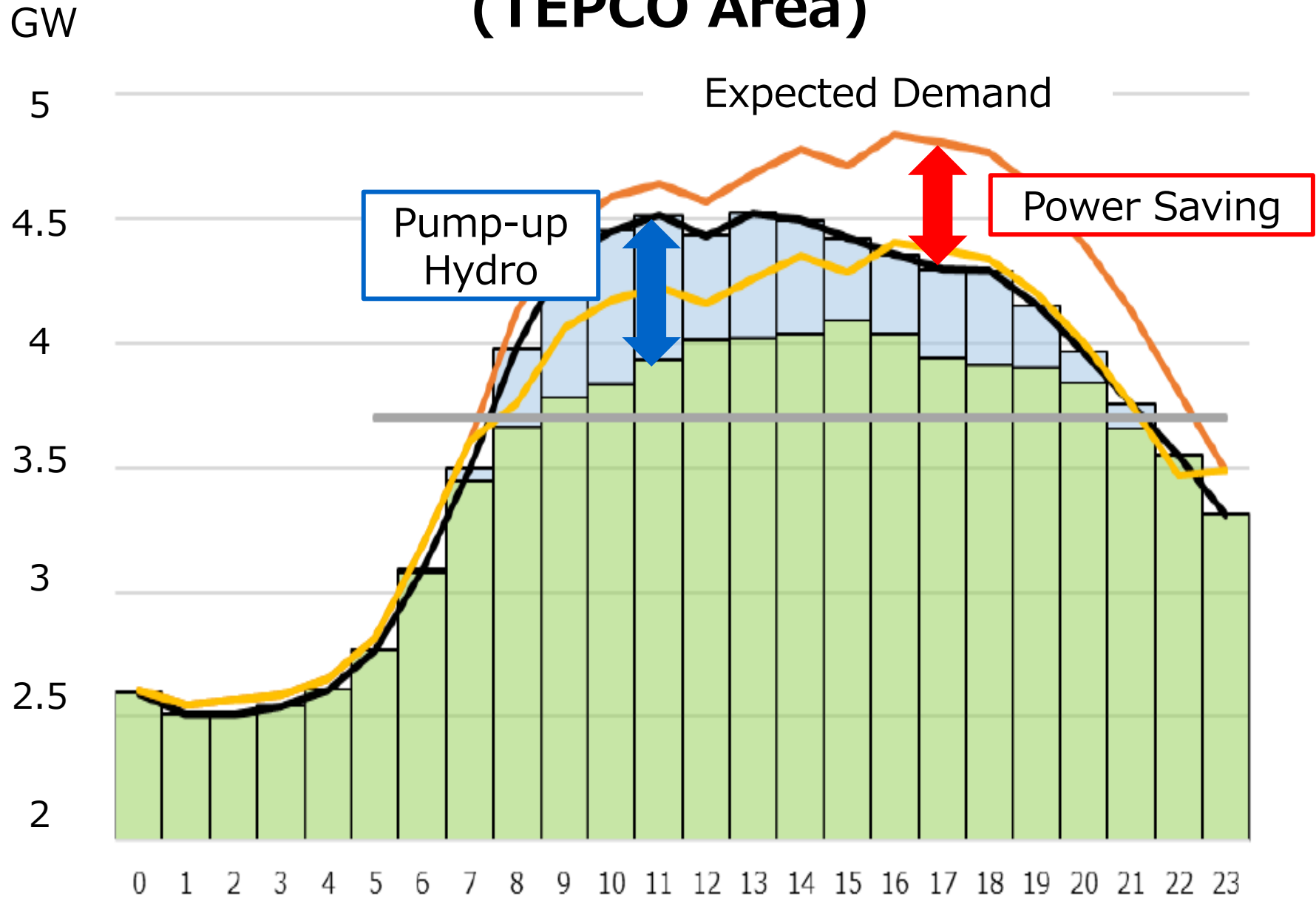


Background② Peak Demand Decline

- Peak demand in TEPCO area plunged by more than 10% after the Great East Japan Earthquake in 2011.

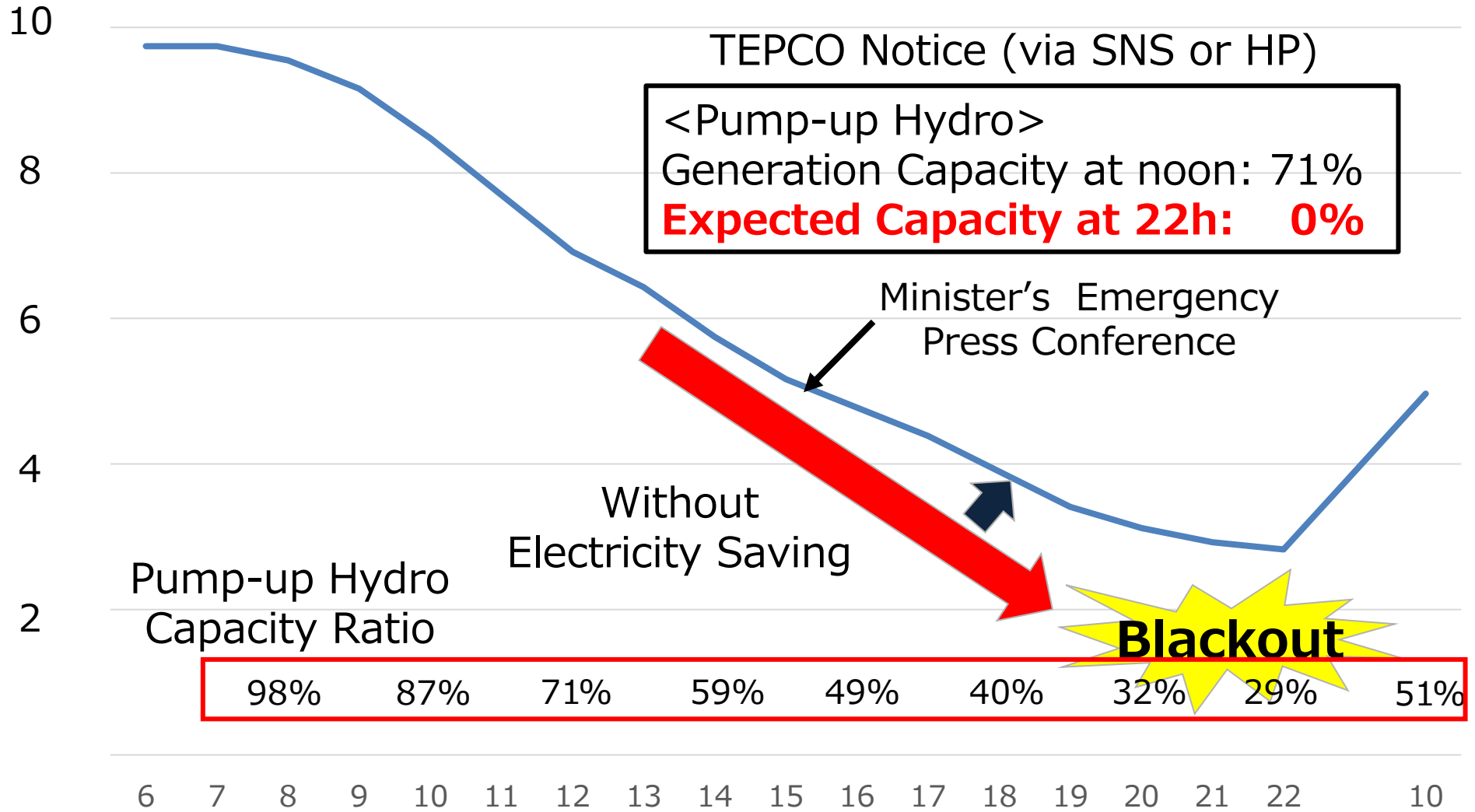


Electricity Demand on March 22 (TEPCO Area)



Pump-up Hydro: The Last Resort

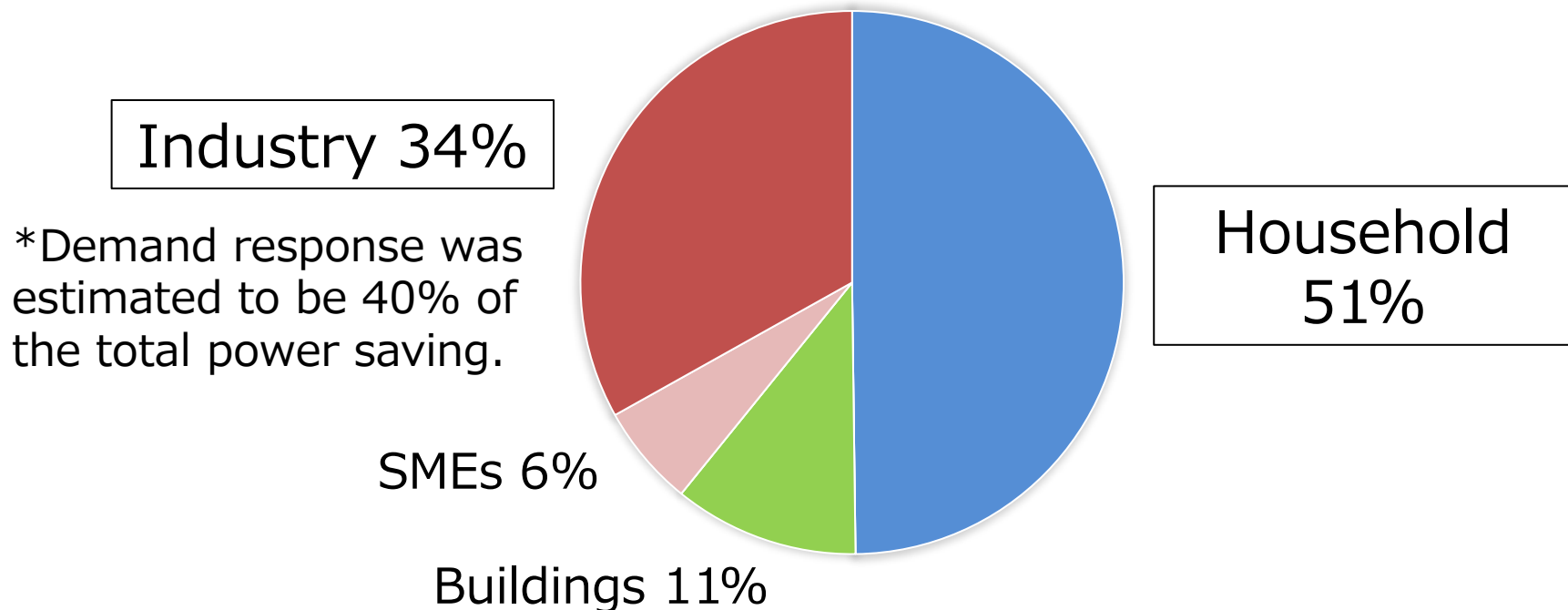
- All fossil-fuel power plants were in full capacity
- Pump-up hydro was the only remaining supply capacity



Power Saving by Segments (Power crunch in March)

- Total electricity saving: 31GWh (est.) = 3% of the total
 - *Saving ratio was 6% from 15h to 22h
 - Industry ▲7% (total consumption: 20% of the total)
 - Household ▲4% (total consumption: 40% of the total)

Electricity Saving by Segments



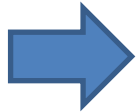
Power Crunch Alert Mechanism

(Evolved from March to June crises)

Introduced after power crisis
in March 2022

Two Days Ahead (at 6pm)

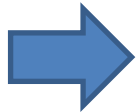
- Expected reserve margin below 5%



"Power crunch preparation notice"

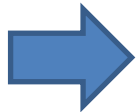
Day Ahead (at 4pm)

- Expected reserve margin below 5%







"Power crunch advisory"

- Expected reserve margin below 3%



"Power crunch alert"

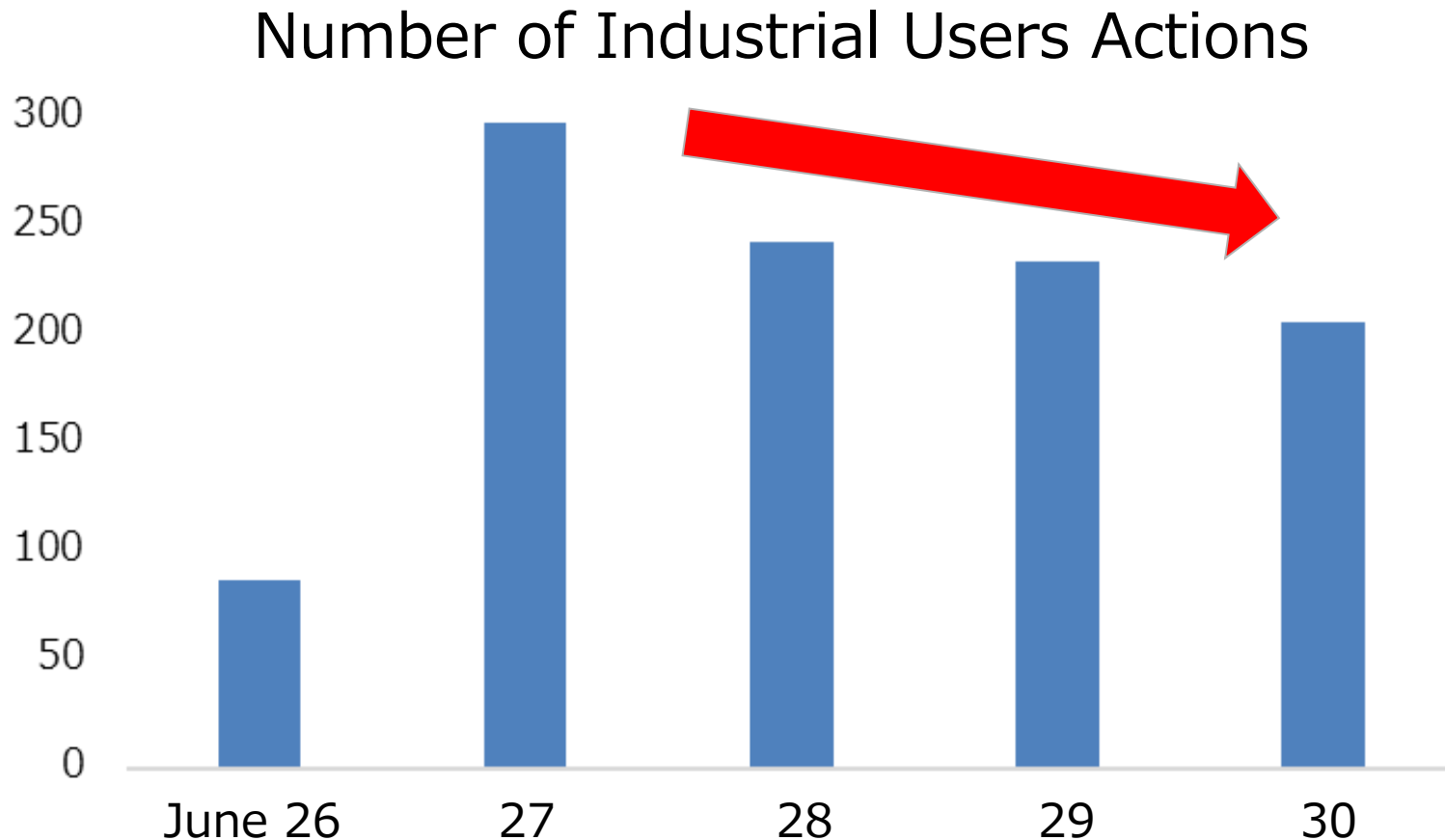
Comparison Between March & June Crises (Industrial Users Response)

| | March (Alert) | June (Advisory) |
|--------------------------------|---------------|---|
| Be aware of crisis a day ahead | 50% |  60% |
| Prepared for crisis in advance | 20% |  60% |
| Took action to save power | 80% | 60%* 90% of those prepared |
| Saving ratio | ▲ 7% (1 day) | ▲ 2% (4 days) |
| Possible power saving of 0-5% | 30% |  40% |
| Possible power saving of 6-10% | 10% |  20% |

June Power Crisis Response by Industrial Users

<Power Saving Actions>

- Turn off unused lights
- Raise the temperature of air-conditioner
- Switch from electrical to gas air-conditioner



Lessons Learned

- Electricity conservation is an effective measure, especially when supply measures are exhausted.
- Industry and household are two pillars of electricity conservation.
- The earlier industrial users are announced, the more they can take action to save power.
- Media plays a crucial role in disseminating information, which is a key for household electricity conservation.
- Prolonged power conservation campaign reduces the response by both industrial and household users.

Korea's Demand Management Measures to Respond to the Energy Crisis (PR, Campaign, etc.)

28 September 2022



Ministry of Trade,
Industry and Energy



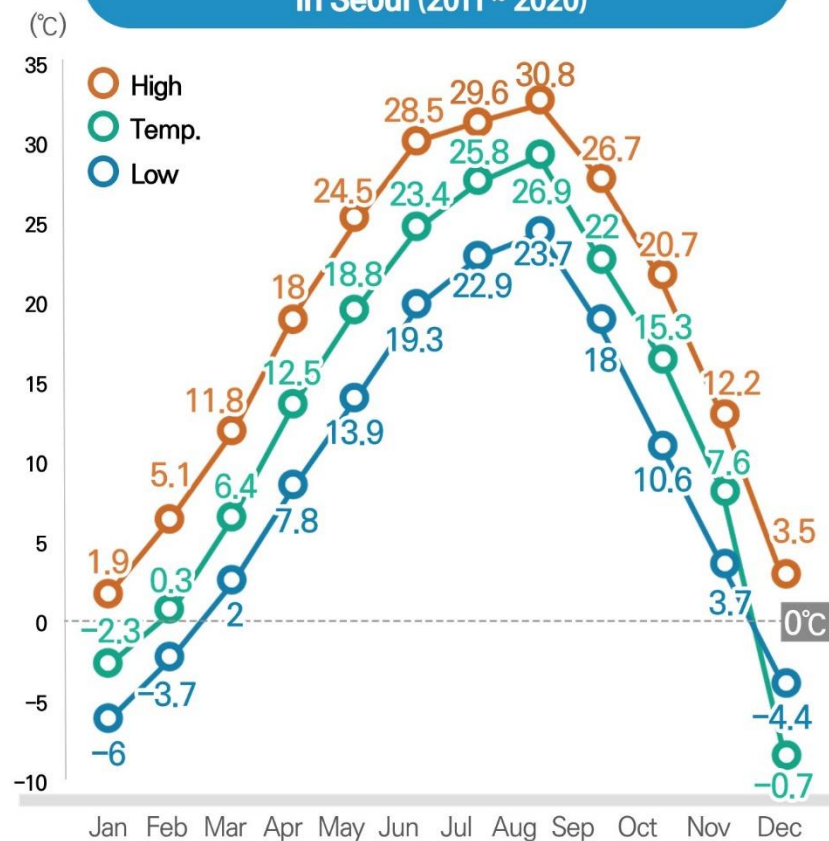
**KOREA ENERGY
AGENCY**

1 Measures to Reduce Energy Demand and Enhance Efficiency for the Summer of 2022

Background

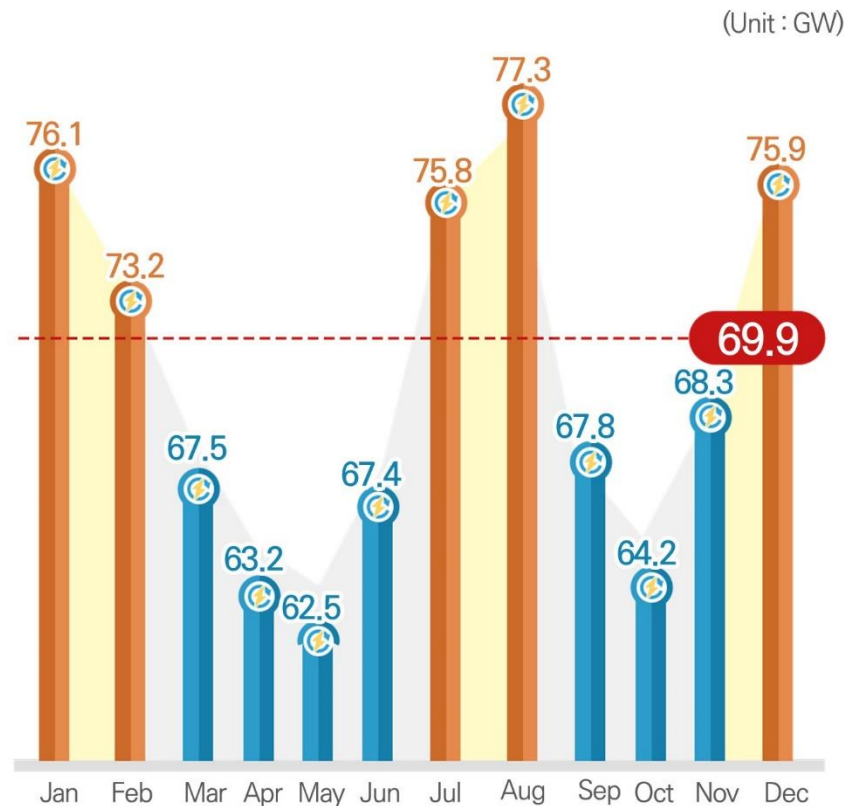
- The massive power outage(Sep 2011) led to the establishment and implementation of energy-saving measures to respond to the power supply crisis
- Korea's heat waves in summer and sub-zero temperatures in winter lead to rapid increases in energy demand during summer and winter times (maximum power usage)

Average monthly temperatures in Seoul (2011 ~ 2020)



* Source: Open MET Data Portal, Korea Meteorological Administration

Average monthly maximum power usage for the past five years (2017-2021)



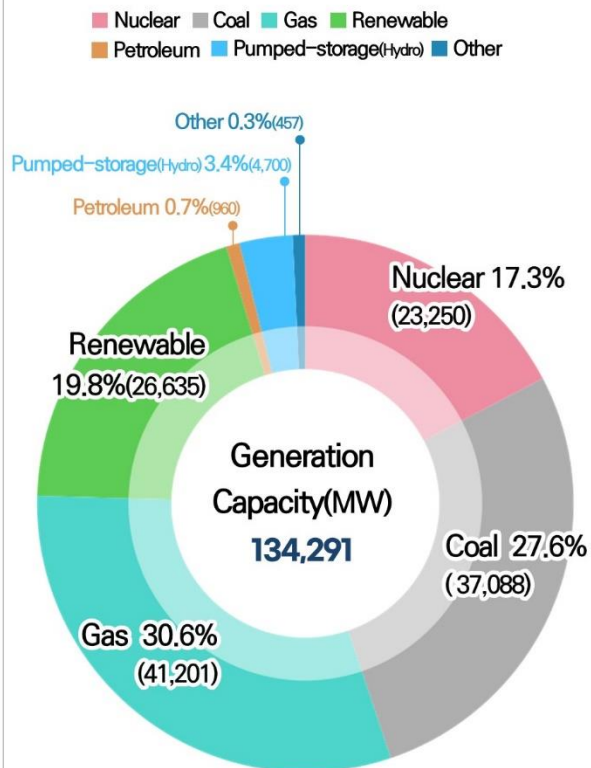
* Source: Electric Power Statistics Information System, Korea Power Exchange

1 Measures to Reduce Energy Demand and Enhance Efficiency for the Summer of 2022

▶ Background

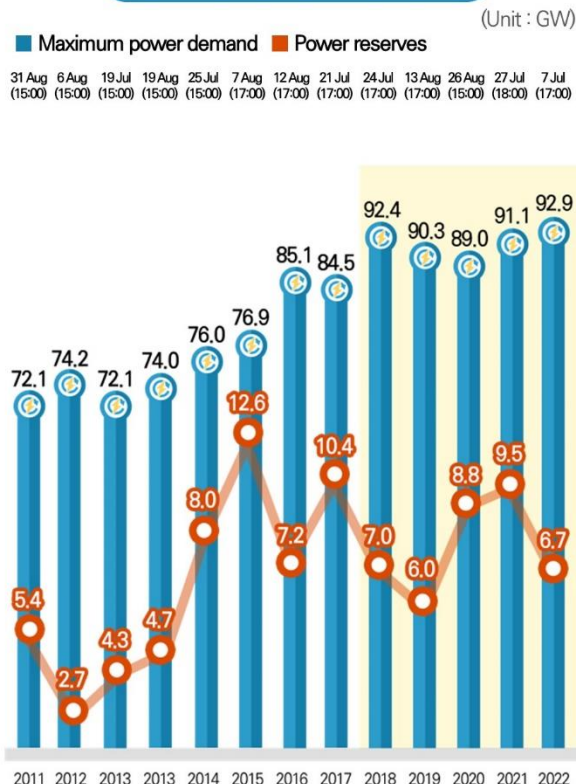
- Power generating capacity for Jul–Aug 2022 was 134GW, with the maximum supply capacity of approx. 102GW
- Maximum electricity demand for this summer reached a record high (92GW) on Jul 7, 2022 (reserve capacity: 6.7GW, reserve rate: 7.2%)

Generation Capacity by Energy Source



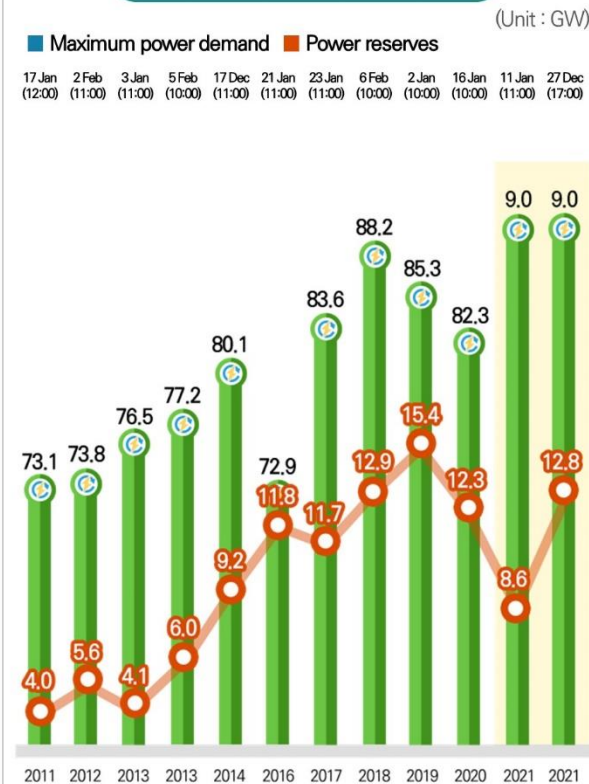
* Source: Monthly report on power statistics, power generating facilities (Jul 2022)

Summertime



* Source: Electric Power Statistics Information System, Korea Power Exchange

Wintertime



* Source: Electric Power Statistics Information System, Korea Power Exchange

Encourage the public participation in energy-saving by spreading the culture of practicing energy efficiency

→ Campaigns

- ✓ Encourage citizens to contribute to carbon neutrality by practicing energy efficiency under the slogan *"We are the NZ (Net Zero) generation that cherishes the Earth!"*

✓ Energy Challenge Participatory relay challenge event with a short song and dance, carrying a message to take part in energy efficiency innovation

- With K-pop celebrities as the start, citizens started uploading their videos through YouTube and Instagram challenge events (323 videos, 747 participants)



TV promotion (music shows)



Social media promotion (K-pop star)



Event participation (citizens)

✓ Online Campaigns Created and distributed emojis on Korea's dominant messenger platform 'Kakao' to improve promotional effect

- Distributed 50,000 emojis was exhausted the entire quantity within 2 hours and 45 minutes



➤ Campaigns

- ✓ Operated national offline campaigns led by citizens & campaigns utilizing distribution channels

- ✓ **Cooperation with civic groups** KEA cooperated with civic groups and ran 30+ summer energy efficiency innovation campaigns across 15 cities and provinces
 - Operated 'Keep the minimum temp. of 26°C indoors', 'turn A/C on with doors closed', 'participate in efficient energy usage' campaigns for stores and citizens



Gangnam, Seoul (Jul 21)



Daegu (Aug 20)



Jeonju (Aug 9)



Jeju Island (Aug 4)

- ✓ **Cooperation with civic groups** Joint campaigns for energy saving through cooperation with distribution franchises such as CU and GS25 convenience stores
 - Sent out energy-saving videos via digital screens installed in 53,000 branches of the franchise stores



Media PR

National promotion through various channels such as TV, newspaper, social media, express railway, etc.

Public ad

Created public ads containing energy efficiency innovation messages and promoted them via various channels



TV ads



Newspaper ads



Express railway monitor ads



Bus monitor ads

Social media PR

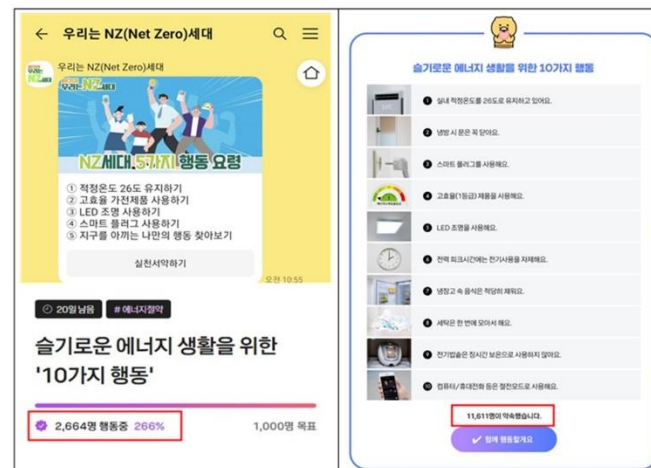
Tips on summertime power saving and efficiency practices : video cartoons (YouTube), card news (blogs, Facebook, etc.)



Video cartoon (YT)



Card news (Naver blog, FB)



Online energy efficiency practice pledge (Kakao platform)

>>> Operated incentive programs to encourage energy saving in domestic households <<<

3·3·3 program' for electricity saving

Save 3% of electricity with 3 actions in a 3-month period

✓ **Objective** Encourage voluntary and continuous behavioral changes for energy-saving in households through programs linked to electricity-saving volunteer works

✓ **Subjects** 1,000 people (1 person per household may apply, no limits in region/age)

✓ **Period** July to September (recruited participants on a monthly basis)

✓ **Details**

| | | |
|---|---------------------------------|---|
| 01 Practice energy-saving activities at home | 02 Promote energy-saving | 03 Check the electricity-saving performances |
|---|---------------------------------|---|



Granted volunteer work hours (4 hours per month) for participants who have completed all three tasks

Energy 'Cashback'

✓ **Details** A program that returns cash to the apartment complexes or households participating in the project that have significantly reduced electricity usage compared to neighboring counterparts, proportionate to the reduced electricity usage amount

✓ **Operation Scale-up** Expanded the scope of the pilot project in July : 3 cities → nationwide

✓ **Period** July to December 2022 (application period: July–August)

✓ **Performance of pilot project** Recorded an average of 14.1% energy reduction rate per household (total reduction amount: 779MWh)



Public organizations proactive execution of summertime energy saving

Public organizations

Compliance with appropriate air-conditioned temperature, turning off unnecessary lighting, etc.

- Energy Saving Committee Discover energy-saving items within organizations with the operation of the committee
- Compliance with appropriate temperature 28°C or higher for indoors
- Efficient use of lighting equipment Partially turn off lights for windows and corridors (non-office spaces) where sunlight enters
- Controlled elevator operation Operate elevators for every two floors for 5-story or higher buildings
- Reduction of standby power Install and use SWs that automatically save electricity when PCs are not being used

Alleviate electricity peaks

Consecutive suspension of A/C in summertime, recommendation for dispersion of summer vacation

Consecutive suspension of A/C

Temporarily shut down A/C facilities or minimize the load for 30 minutes during peak electricity hours(2pm–5pm) across six regions nationwide

Dispersion of summer vacation

Recommendation to spread out summer vacation schedules in the first three weeks of August, the estimated electricity peak for 2022



A/C Suspension poster



Vacation Dispersion Poster

Lack of natural gas and potential energy price spikes call for stronger response measures

▶ Public organizations to take initiative in energy-saving

- Compliance with appropriate heating temperatures
- Consecutive suspension of heating equipment during wintertime
- Turning off the landscape lights of public facilities
- Implementation of the '5th-day-no-driving' system



▶ Expand public participation in energy saving

- Promote ways to reduce 10% energy during wintertime
- Run campaigns such as 'turning on the heat with doors closed', 'wear warm innerwear in winter,' etc.
- Push for scale-up of the energy cashback initiative



Thank you



Ministry of Trade,
Industry and Energy



KOREA ENERGY
AGENCY



Encouraging Danes to save energy

Behavioral campaign





ENCOURAGING DANES TO SAVE ENERGY

Current energy situation calls for a reduction in our energy consumption

Means of action: behavioral campaign running throughout 2022

Purpose: Encourage the Danes to save energy at home and at their workplace

Drivers: economy, energy security and climate

Key message: Together we reduce our use



Energi styrelsen

Spar på energien

El og varme er blevet dyrt, fordi der mangler energi i Europa. Skal vi sikkert gennem vinteren, skal vi stå sammen om at spare på energien. Sætter vi energiforbruget ned, kan vi skære toppen af energiregningen og være med til at sikre, at der er energi nok til alle.

Spar på strømmen

Skru ned for varmen

Brug strømmen, når den er billigst

Begræns brug af varmt vand

Læs mere på [SparEnergi.dk](https://sparenergi.dk)



THE PHASES OF THE CAMPAIGN

Phase 1 Launch (June-Aug.)

Main focus

- [Electricity savings](#)
- Use less hot water
- Energy renovation
- Flexible use of electricity

Phase 2 Preparing for heating season (Aug. – medio Oct.)

Main focus

- [Prepare your home for Winter](#)
- Electricity and hot water savings

Phase 3 Heating season (medio Oct.-Dec.)

Main focus

- [Heating savings](#)
- Electricity savings
- Hot water savings

Targeted campaign towards workplaces (medio sept.- dec.)



TARGET GROUPS

1



Broad Danish Population

The Danes must understand the importance of reducing their use – and do so

*Outdoor, PR, print, TV,
Social media*

2



House owners

Energy renovations of your home is a good way to save on heating and electricity bills – especially if it's done before the heating season.

Social media, webinars

3



Gas boiler owners

The approx. 400,000 households with gas boilers requires separate and targeted effort.

*Direct digital information,
webinars, social media*

4



Workplaces

Danes must be aware of energy-saving behavior in the workplace and know how to act on it.

Partnerships with industry organization, Social media, Print



LEARNINGS SO FAR

We are working with a moving target → requires the ability to read and understand the target group and the flexibility to act upon sudden changes.

How we navigate:

- Frequent population surveys
- Reports from our national advisory service/hotline
- Feedback from our partners
- Close cooperation with other parts of the Agency
- Scaling of concept/tone of voice
- Testing and evaluating

How to measure effect:

- Campaign KPI's
- Population surveys
- National energy consumption





QUESTIONS?

#ReduceYourUse

Reducing energy use with behaviour and awareness campaigns

IEA, 28 Sep 2022

Tom Halpin, SEAI

On behalf of Department of Environment,
Climate and Communications



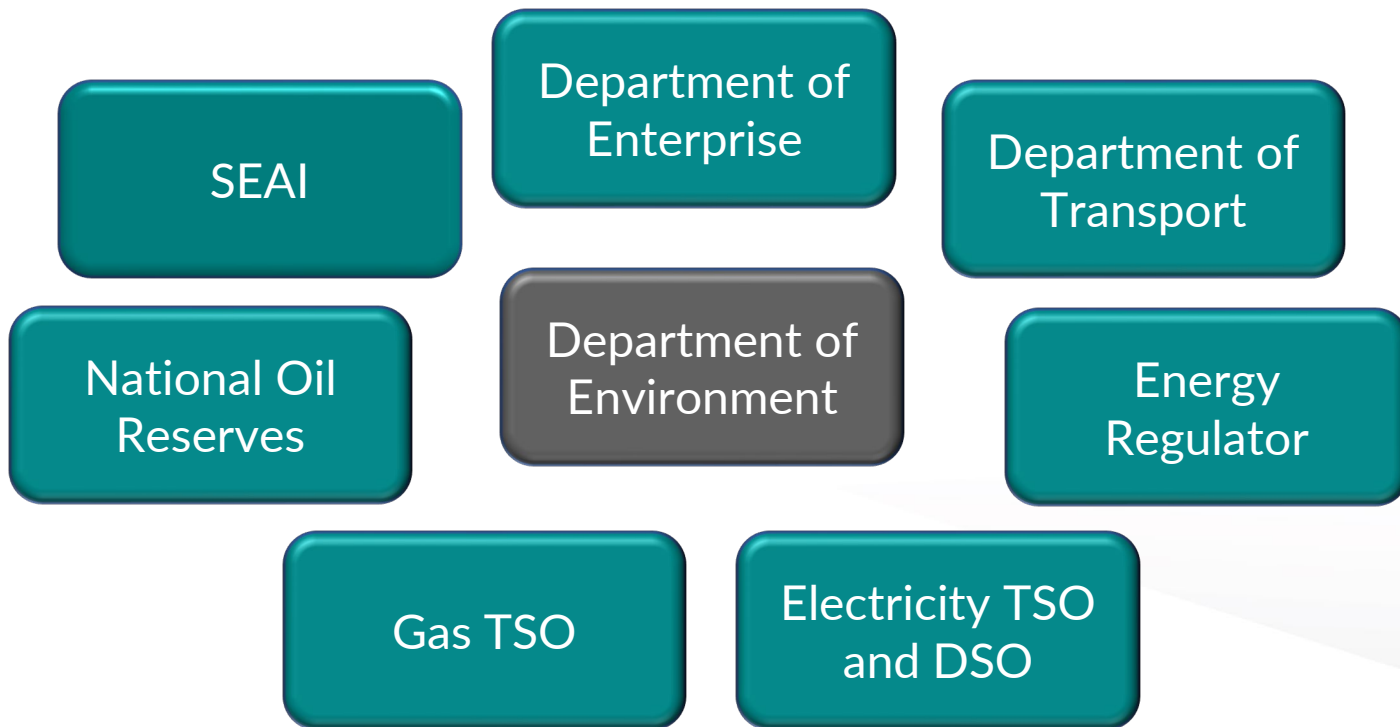
Rialtas na hÉireann
Government of Ireland

Phase 1: Needs, Challenges, Objectives

| Needs | Challenges | Communications Objectives |
|---|--|---|
| <ul style="list-style-type: none">• Public awareness of energy use, efficiency and cost saving• Inform the public of wider Government support• Establish energy efficiency within broader energy security context | <ul style="list-style-type: none">• Extremely tight turnaround• No opportunity to test messaging• No baseline research data on energy efficiency behaviours• Launched in the context of a backlash from public looking for financial assistance | <ul style="list-style-type: none">• Kick-start regular Government energy efficiency campaigns, establishing a platform for energy emergency scenarios• Establish platform that would not attract public backlash• Highlight Government supports for homes and businesses to tackle the cost of living crisis. |



Integrated National Working Group



Phase 1: Campaign Overview



Radio

Four week, national and regional



Press

Two weeks, national papers



Social

Always on



Audio Digital

Across key streaming platforms



PR

Complementary push from working group members



Digital

Homepage takeovers of key news and consumer sites

REDUCE YOUR USE

War and conflict are affecting energy prices across Europe.

Government supports are available to lessen the impact on homes and businesses.

By reducing our daily energy use, we can save money and limit our reliance on imported fossil fuels.

Now, more than ever, we need to be mindful of how we use energy in our daily lives – from the moment we wake until we switch off the lights at night.



Heating

Use timers and thermostats to heat your home and hot water to the temperature you need.



Appliances

Use cookers, tumble dryers, washing machines, showers and kettles efficiently and where possible outside peak hours of 4-7PM.



Travel

Avoid using the car for short journeys; consider walking, cycling or public transport where available.



Driving

Drive at lower speeds where safe to do so in order to reduce your fuel use.

For more ways to reduce your use, and information on Government supports visit gov.ie/ReduceYourUse



Rialtas na hÉireann
Government of Ireland

Phase 1: Outputs

Paid

- >1.4m Facebook and Instagram, >5m Twitter impression
- Ad seen average of 4-7 times.
- 97% listen through rate on digital audio, reaching 173k users

Owned

- 17k sessions on the ReduceYourUse page on gov.ie
- Total Social Reach: 2.75m

Earned

- Total Media Reach: 3.4m listeners / readers
- Complemented by below the line support from collaborating agencies



Phase 2: Overview

Objectives

- Demonstrate Government's **understanding of cost-of-living** challenges
- Direct people to all **available financial supports**
- Advise people **how best to reduce their energy use**
- Encourage long term sustainable behaviour as **part of a new normal**
- **Profile government actions** with own energy use

Messages

Reduce your costs (supports) and reduce your use (no / low cost behaviours)

Multichannel

TV, print, radio, cinema, outdoor, digital (display, social, PPC)



Measurement Strategy

| | |
|-------------|--|
| Short Term | Message testing |
| Medium Term | Twice monthly tracking of sentiment to energy / cost of living crises |
| Long Term | Bi-monthly longitudinal assessment of behavioural intent / change Scope for longer term sustainability measurement |
| Exploring | Actual use through energy utilities and / or smart meters |



#ReduceYourUse

REDUCE
YOUR
USE

Thank You

Tom Halpin
SEAI, Head of Communications

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@TomEHalpin



Rialtas na hÉireann
Government of Ireland



Italian National Agency for New Technologies,
Energy and Sustainable Economic Development

Italia in Classe A

National training and information Program for Energy Efficiency

28th September 2022

Anna Amato / Energy Efficiency Department, Lab of Communication Tools for EE



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Italia in Classe A

Training & Information Programme 2016 – 2020

National long-term campaign based on different types of programs (information, social interaction and cognitive education) targeted to large companies and SMEs, Public Administration, citizens, school students.

In order to reach a variety of target audiences, different actions and tools (Roadshow, Radio-TV Campaign, energy efficiency month, apps) have been used throughout the campaign

- Goals: decarbonizing the EU's energy system to reach 2030 climate objectives and to become carbon neutral by 2050.
- 3 pillars: technologies; resources; governance

Italia in Classe A



- Phase 1 – Start up (first year): massive information/communication activities on energy saving and energy efficiency topics, to ensure initial basic knowledge
- Phase 2 – Tailored targets (second year): central phase of the Programme, maximizing information coverage and starting the tailored actions.
- Phase 3 – Monitoring and consolidation (third year): consolidating the initiatives; dissemination of results and analysis of the communication impacts, with evaluation and control of achieved results



Experts in TV shows and working with the TV authors --- more than 50 million viewers

Some initiatives....



Women EE storytelling

Opinion leaders



Info-reality web series



Exhibitions

Italia in Classe A

Lessons learnt /Impact

- Target segmentation - channel/language/style
- Impact measurement for each initiative
- Continuous dialogue with stakeholders and graduality

An attitudinal survey, carried out in 2019, evaluated the effects of information campaigns: in particular, a representative sample of the Italian adult population was reached, for a total of 3,036 respondents

Key factors:

- Multidisciplinary approach and different skills involved
- Actions oriented to behavioral change – not only in the design interventions stage and for the strategic drivers, but when planning how to monitor the results (persistence/long term effects...effectiveness, RCT)

Italy's Training & Information Programme on **ENERGY EFFICIENCY**

A new national EE program for information and training actions has been approved according to art.12 of 2020 Decree 73.

Timeline: until to 2030

Budget: 9 million every three years

It is included in the National Recovery and Resilience Plan, part of the Next Generation EU (NGEU)

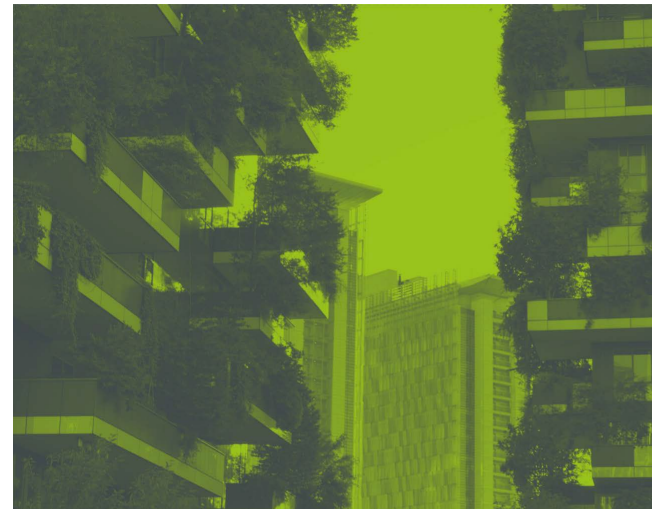
www.italiainclassea.enea.it



Italia in Classe A

URBAN REGENERATION - DE-SIGN project

- Focus on environmental and social impact of buildings and infrastructures (technologies) in energy transition process
- **sustainable energy-driven design solutions** at domestic and urban level, in a perspective of a behavioural change, both for users and public and private decision-makers
- to go beyond the contingent dimension of the problem, in a multi-scalar perspective
- mapping and sharing best practices
- bottom up tools, i.d **tactical urbanism**



- in line with the New European Bauhaus, to enhance **inclusion, sustainability and beauty**

Italia in Classe A

Actions planned

Women in Classe A:

- to build structural and non-episodic gender policies
- different narrative of STEM that can reach the youngest generations
- training on financial issues linked to energy management
- new lexicon of energy technologies to reduce gender gap in the energy efficiency supply chain

Digital transformation: New portal - interoperability and AI for all existing Italian resources and information on EE, i.d.funding programs, incentives, tips

Energia fatta ad arte: art and energy transition

Italia in Classe A

Actions

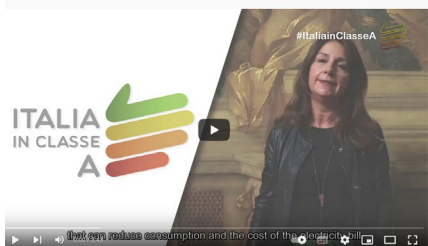
- **KDZENERGY** for teachers and school students aged 7 to 14 years, KIDZTeD , KIDZDoC, storytelling
- **Oikia:** households' behaviour in renovated buildings and new technologies
- **Healthy home:** comfort, Indoor Air quality, well-being
- Tips for energy saving at home, at workplace, shops...



- Mass media Campaign

Italia in Classe A in ENG

<https://www.youtube.com/watch?v=qqiYLvcdS8>



<https://www.youtube.com/watch?v=OwHRjdQsz1Y>

Anna Amato
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Italia in Classe A #roadshow
<https://youtu.be/coljoWlxY4g>



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The Supercondominium
Challenge (min 16)
<https://youtu.be/mXInLqL9nQI>

HIPERMARKET (min 16)
<https://youtu.be/FHra5x-hP3c>



Italia in Classe A – IEA Workshop - 28th September 2022