
First Announcement

The 23rd IERE General Meeting and Singapore Forum

**Accelerating the Carbon-Neutral Energy Transition
for Industry and Territories**

In-Person Event



Marina Bay, Singapore

**November 21–24, 2023
Singapore**

Organized by ENGIE and IERE

Message from IERE Chair

I invite you all to the IERE Singapore Forum which will take place between November 21 and 24, 2023. Co-hosted by ENGIE, the forum's theme is "Accelerating the Carbon-Neutral Energy Transition for Industry and Territories".

Even though world political and economic conditions are increasingly difficult and unforeseeable, we need to accelerate our efforts to achieve carbon neutrality as fast as possible. Renewable energy is key to the solution. However, we must consider challenges such as intermittent power generation, limitations to control, and the discrepancy between where people live and where renewable energy is abundantly available at a low cost. For these reasons, we need to develop a wide array of solutions, including the use of green hydrogen, CCS, energy storage, transmission system enhancements, and innovation in power systems and demand-side control. In addition to these technical matters, we have to consider economic, social and environmental aspects.

The situation differs from country to country, requiring specific approaches. That is why experts across the world need to cooperate and exchange information and insights. In this forum, we foster discussion among attendees and provide ample time for debate during presentations, Q&A sessions, and breakout sessions. I invite you to join this worldwide discussion.

During the forum, you can also join the 23rd IERE General Meeting where we present and discuss IERE's activities of the past year. Special attention will be given to the new IERE "Technology Foresight 2023" report, which discusses the technologies that IERE believes will have the biggest impact on electric power industries around the year 2030. The report also outlines the current state of these technologies.

Singapore is a unique business hub in Asia where people from various countries gather, communicate and cooperate. It is therefore a great place for this forum and general meeting. I firmly believe that the event will be fruitful to all of you as it will help to promote the path to carbon neutrality.

Finally, I would like to express my deepest gratitude and appreciation to ENGIE for co-hosting and organizing this IERE General Meeting and Singapore Forum.

I am looking forward to meeting and discussing with you in Singapore.



MINO Yoshiaki

IERE Chair
CRIEPI, Japan

Message from ENGIE

Accelerating the ‘and’ of the carbon neutral energy transition

The interesting thing about energy discussions is that one does not need to have expertise in the field to have a strong opinion. Reason of course is that energy is so present in our daily lives; and in fact is critical to society. Energy enables a high quality of life and if properly done, makes humans healthy, wealthy and free. In fact, it enables our access to clean water and healthy food as well. In many of these entertaining energy discussions, people seem to dominantly think in opposing ideas: nuclear or gas turbines to complement intermittent renewable electricity production, electricity or gas to produce heat, Li-ion batteries or Redox flow batteries for grid stabilisation, electricity or hydrogen mobility, biogas or synthetic natural gas. At ENGIE we believe these discussions should no longer oppose technologies but focus on where and how these technologies can complement each other. Moreover, the time for acceleration on all these technologies has come if we want to reach our ambitious climate targets of staying well below 2 degrees.

One of the most famous discussions is **whether** in the future, mobility will use electricity, hydrogen, biogas or synthetic gaseous or liquid hydrocarbons as its fuel? The question already implies one would have to make choice whereas a more correct question would rather be: **where** will in the future, mobility be fueled using electricity, hydrogen, biogas or synthetic hydrocarbons? Another interesting ‘OR’ debate is whether we should electrify or gasify our industry as we move towards a carbon neutral world. At ENGIE we believe we should do both and both simultaneously. Electricity has some important advantages over gas and turning electricity into gas reduces efficiency and increases costs. However, we may need to pay this price to make energy storable over longer periods or make it more energy dense to transport and use existing transport and usage infrastructure. In fact, when introducing technologies such as P2G (Power to Gas) and P2G2P (Power to Gas to Power), the distinction between electricity and gas becomes very small and both are easily converted back and forth. So as such the discussion whether we should electrify or gasify makes little sense since we need to accelerate on both!

Finally, it remains difficult to predict the possible impact of game changing technologies, that will for sure pop up in the coming years, will have on the zero-carbon energy transition. Engie is committed to **co-develop** these emerging technologies using pilots and demos with partners to help the much needed acceleration. Apart from the environmental and economic aspects of new technologies, the support of the citizens is crucial. The social acceptance and consequent adoption of new technologies will (co-)determine whether a technology will breakthrough. The energy transition will therefore be an ‘AND’ story along two axes: (i) we will need many emerging ‘sustainable’ technologies; there is not one that has the potential to overcome the challenge alone and (ii) the challenge is too large to overcome alone as a person/company/sector, we must collaborate. Join us in our journey to accelerate towards a carbon neutral energy transition.



Jan MERTENS

Chief Science Officer
ENGIE

Accelerating the Carbon-Neutral Energy Transition for Industry and Territories

About the theme

Energy enables a high quality of life and if properly done, makes humans healthy, wealthy and free. In fact, it enables our access to clean water, healthy food and transport as well.

Today, the global energy sector is strongly relying on fossil-based energy. But energy transition is a pathway toward transformation to net zero-carbon emissions by the second half of this century. At its heart is the need to reduce energy-related CO₂ emissions to limit climate change. Renewable energy and energy efficiency measures can potentially achieve 90% of the required carbon reductions (IRENA, 2020).

However not only do these renewable solutions have to answer 3 effectiveness requirements: economical, social and environmental; there is also a discrepancy between where people live and where cheap abundant renewable energy is available. In addition, the intermittency of renewables has to be taken into account.

It is therefore without a doubt that when switching to a net zero-carbon emission world, enormous amounts of renewable energy will need to be transported. High Voltage Direct Current (HVDC) electricity transmission lines will be a part of the solution but as distance increases, other transport modes will come in play. Converting the electricity into an energy carrier such as hydrogen, ammonia or synthetic hydrocarbons will be required.

As for the intermittency, the development of information and data management technologies should ensure that the ensemble operates in a stable and reliable manner. Demand side management systems must ensure that the supply and demand of energy match and storage solutions will play in crucial role in this.

Who should attend?

The Forum is intended for experts involved in the selected themes, from IERE members and non-members, as well as all those interested in the evolution of the energy transition and the technology development and business development opportunities associated to this evolution. ENGIE & IERE will invite prominent speakers for keynote speeches.

Schedule Outline:

Tuesday	November 21, 2023	Registration and Welcome Reception (In the evening)
Wednesday	November 22, 2023	The 23rd IERE GM & Singapore Forum (Day 1), Official Dinner
Thursday	November 23, 2023	The 23rd IERE GM & Singapore Forum (Day 2), Social Event (Optional)
Friday	November 24, 2023	Technical Tour (Optional)

Program and Session Themes

Session structure and speakers may be subject to change according to the submission of contributions.

November 21, 2023

Registration and Welcome Reception

November 22, 2023

Plenary Session – WHAT

Opening Address:	IERE Chair
Welcome Speech:	ENGIE
Keynote Speeches:	Details to be announced

Plenary Session – HOW in APAC

Government's point of view for Singapore

Other APAC approach

ENGIE's Ambition in APAC

Break-out Parallel Sessions – SHARE & PULL Workshops

Session 1 (in parallel with Session 2)

Theme: How to Accelerate Learning by Doing?

Derisking of new technologies (from Renewables to e-fuels), through piloting and demonstrating, is crucial for the acceleration of our carbon neutral Energy Transition.

Potential topics include:

- Technologies overviews/panoramas/roadmaps
- Carbon neutral projects (low/medium TRLs)
- Industrial Carbon Neutral projects
- Co-development of technology / technology de-risking (with or without technology developers)
- ...

+ Debate

Session 2 (in parallel with Session 1)

Theme: Making Business Out of It

Entering new segmenting markets can be complex especially in a moving and accelerating context. How does one bring the different actors together?

Potential topics include:

- Multi-OEMs projects and REX (Return of Experience)
- Venturing projects and REX
- Industrial symbiosis set-up and approach
- R&D funded projects (National, Regional, , ...) and approach
- Entering new segmenting markets (Asian, African, European, Residential, Centralized, Decentralized, Aggregation...)
- ...

+ Debate

Session 3 (in parallel with Session 4)

Theme: Transversal Enablers

On top of the technology itself there is a growing need for transversal enablers.

Potential topics include:

- Critical materials, recycling, etc. in Projects
- Digital and/or Data mining in Projects
- Management of expertise within companies
- Smart-Grid / Energy Management systems in Projects
- Management of expertise in Projects
- REX Methods establishment in Projects
- Risk management & appetite in Projects
- ...

+ Debate

Session 4 (in parallel with Session 3)

Theme: Regulatory & Public Acceptance

By-in of Regulatory and Public are becoming crucial to winning projects.

Potential topics include:

- The evolution of regulatory issues
- Integration of public dialogue in new projects (REX)
- Projects involving grid autonomy : Local Energy Communities, Community ventures, etc. (REX)
- Projects with Crowd funding (REX)
- Projects with new requirements and constraints : e.g. LCA, hand-print etc.
- Best practices to enable co-funded projects (national, regional, etc.)
- ...

+ Debate

November 23, 2023

Plenary Session – IERE General Meeting

The report of IERE activities by IERE Chair and IERE Central Office

The report of IERE R&D Projects

The report of IERE Technology Foresight 2023

Keynote Speeches: Details to be announced

Break-out Parallel Sessions – SHARE & PULL Workshops

Session 5 (in parallel with Session 6)

Theme: Green Molecules

Technologies overview or specific projects case studies.

Potential topics include:

- Direct Air Capture
- CCU
- CCS
- E-fuels
- Hydrogen production
- CO2 logistics
- Long distance transport of Energy (using molecules such as H2, NH3, Methanol, Methane, ...)
- Green mobility (electric, green molecules, ...) for personal mobility but also for shipping, aviation, heavy duty,

- ...

+ Debate

Session 6 (in parallel with Session 5)

Theme: Circularity & Energy Efficiency

Technologies overview or specific projects case studies.

Potential topics include:

- Circularity of assets (wind/solar/other...)
- Circularity in industrial processes
- Heating & Cooling technologies
- District Heating & Cooling
- Heat pumps
- SWAC
- Retrofit with Led-lighting
- ...

+ Debate

Session 7 (in parallel with Session 8)

Theme: Renewable Energy & Electrification

Technologies overview or specific projects case studies.

Potential topics include:

- Green mobility (electric, green molecules, ...) for personal mobility but also for shipping, aviation, heavy duty, ...
- Floating PV
- Floating Wind
- Agri-PV
- Industrial heat
- ...

+ Debate

Session 8 (in parallel with Session 7)

Theme: Flexibility of the Energy System

Technologies overview or specific projects case studies.

Potential topics include:

- Grid Scale Electricity Storage including and beyond Lithium Ion
- New storage technologies including heat/cold
- EMS
- Green fuel combustion in thermal units
- Thermal storage
- Virtual Power Plant
- Hybridization
- ...

+ Debate

Closing Remarks

Poster Session

Details to be announced

Social Event (Optional)

Visiting Cloud Forest and Flower Dome with Dinner at Jumbo Shrimp Restaurant.

* The maximum number of participants is 30.

** This offer is on a first-come-first-served basis.

November 24, 2023

Technical Tour (Optional)

Visiting [REIDS-SPORE \(ENGIE's Award-Winning Multi-Energy Demonstrator\)](#) or NTU laboratories.

* The choice is weather dependent as REIDS-SPORE is on an island.

** The maximum number of participants is 40.

*** This offer is on a first-come-first-served basis.

Program (subject to change)

November 21, 2023

18:30–19:00 Registration

19:00–21:00 Welcome Reception

November 22, 2023

The 23rd IERE General Meeting and Singapore Forum (Day 1)

08:30–09:00 Registration

09:00–10:40 Plenary Session – WHAT

11:10–12:40 Plenary Session – HOW in APAC

12:40–14:10 Lunch

14:10–15:50 Break-out Parallel Sessions – SHARE & PULL Workshops (Session 1&2)

16:20–18:00 Break-out Parallel Sessions – SHARE & PULL Workshops (Session 3&4)

19:30–23:30 Official Dinner

November 23, 2023

The 23rd IERE General Meeting and Singapore Forum (Day 2)

08:30–09:00 Registration

09:00–12:00 Plenary Session – IERE General Meeting

12:00–13:20 Lunch

13:20–15:00 Break-out Parallel Sessions – SHARE & PULL Workshops (Session 5&6)

15:20–17:00 Break-out Parallel Sessions – SHARE & PULL Workshops (Session 7&8)

17:00–17:10 Closing Remarks

Social Event (Optional)

Around 17:30 Departure at PARKROYAL COLLECTION Pickering

Around 23:00 Break up at the nightlife area along the riverside

November 24, 2023

Technical Tour (Optional)

Around 09:00 Departure at PARKROYAL COLLECTION Pickering

Around 13:00 Return to PARKROYAL COLLECTION Pickering

Call for Papers

<<**Abstract Submission: No later than ~~July 23, 2023~~ September 8, 2023**>>

You are kindly invited to submit abstracts for the Oral Session or Poster Session for the Singapore Forum by e-mail.

to: **register (at) iere.jp** [Please substitute “ (at) ” with “@”]

As for the **format of the abstract**, please refer to “Events” page on IERE website.

<https://www.iere.jp/events/forum/2023-singapore/forspeakers.html>

- There is a possibility we ask you to change from Oral Session to Poster Session in accordance with the number of submission of abstracts.
- Abstract will be posted on the IERE website and open to the public.
- The official language of the IERE Forum is English.

<< **Presentation Files Submission: No later than October 1, 2023**>>

You are kindly requested to submit presentation files (PowerPoint) via E-mail by October 1, 2023.

- Presentation file will be uploaded to IERE website and opened to all participants before the Forum.
- The official language of the IERE Forum is English.

You are also kindly requested to submit Speaker’s Information and Copyright Permission via E-mail by October 1, 2023.

Submission Items & Deadlines

For Participants [including speakers]

Items	Format No.	Deadline	To:
Registration Form	1	October 13, 2023	On-line registration or register(at)iere.jp [Please substitute (at) with @]
Visa Form (If necessary)	5	October 13, 2023 (It takes a few weeks to issue)	register(at)iere.jp [Please substitute (at) with @]
Registration Fee	—	October 13, 2023	Please refer to Next Page
Social Event Fee [Optional]	—	October 13, 2023	Ditto
Technical Tour Fee [Optional]	—	October 13, 2023	Ditto

The format No.1 is not required for On-line Registration.

The formats (No.1 and 5) can be downloaded from

URL: <https://www.iere.jp/events/forum/2023-singapore/register.html>

For Speakers

Items	Format No.	Deadline	To:
Abstract	2	September 8, 2023	register(at)iere.jp [Please substitute (at) with @.]
Speaker's Information	3	October 1, 2023	
Copyright Permission	4	October 1, 2023	
Presentation Slides (PowerPoint file)	—	October 1, 2023	

The formats (No.2 to 4) can be downloaded from

URL: <https://www.iere.jp/events/forum/2023-singapore/forspeakers.html>

Speakers are kindly requested to submit their Speaker's Information, Copyright Permission and their Presentation Slides (PowerPoint file) **by October 1, 2023**.

Registration

Deadline: ~~October 1, 2023~~ **October 13, 2023**

(a) On-line Registration

URL: https://www.iere.jp/cgi-bin/event_form/23GM/event_form_entry.cgi

or

(b) Please submit a registration form (Format 1, Page 15) to IERE Central Office by e-mail.

Registration Fee

Please make payment of the following fee **No later than** ~~October 1, 2023~~ **October 13, 2023** by credit card payment or bank transfer.

The Registration fee will cover attendance at both conference days (including lunches & refreshments at coffee breaks), welcome reception on November 21 and dinner on November 22:

IERE members: US\$ 1,100

Non-members: US\$ 1,800

Academia: US\$ 800

Start-ups: US\$ 800

Recommended Options

Social Event (Optional) November 23 p.m.: US\$ 200

· Cloud Forest and Flower Dome with Dinner at Jumbo Shrimp Restaurant

* The maximum number of participants is 30.

** This offer is on a first-come-first-served basis.

Technical Tour (Optional) November 24 a.m.: US\$ 200

· [REIDS-SPORE \(ENGIE's Award-Winning Multi-Energy Demonstrator\)](#) or NTU laboratories.

* The choice is weather dependent as REIDS-SPORE is on an island.

** The maximum number of participants is 40.

*** This offer is on a first-come-first-served basis.

Special Rate (Technical Tour & Social Event Package): US\$ 350

When participation is cancelled irrespective of the reason, after **October 13, 2023**, Registration Fee might be charged or not be reimbursed.

Accommodation and travel costs will be borne by the participants.

Accompanying Person

If your family accompanies you on reception/dinner, following fees are requested.

Welcome Reception on November 21: US\$ 120

Dinner on November 22: US\$ 200

Payment

On-line Credit Card Payment and Bank Transfer are available.

Deadline: ~~October 1, 2023~~ **October 13, 2023**

(a) On-line Credit Card Payment

If you prefer using your credit card for the payment of registration fee, please go to the following website (US\$ only);

URL: https://www.iere.jp/Payment/paypal_23GM.html

(b) Bank Transfer*

Name of the Bank:	MUFG Bank, Ltd.										
Name of the Branch:	Seijo branch										
Name of the account:	IERE										
Account Number:	0068198										
Bank address:	15-1 Seijo 6-chome, Setagaya-ku, Tokyo, 157-0066 JAPAN										
SWIFT code:	<table border="1"><tr><td>B</td><td>O</td><td>T</td><td>K</td><td></td><td>J</td><td>P</td><td></td><td>J</td><td>T</td></tr></table>	B	O	T	K		J	P		J	T
B	O	T	K		J	P		J	T		

* Remittance charge, Lifting charge, Correspondent charge and other charges should be paid by participants.

Visa

For participants from countries needing a Visa to enter Singapore, please consult with travel agent in your own country for the details.

If you need an Invitation Letter*, please refer to 'Invitation Letter for Visa Request Form'.

* ENGIE is able to issue an invitation letter for participants who need to apply for Visa. It may take a few weeks to complete the procedures in ENGIE, so please submit the form to IERE Central Office as soon as possible.

* **Submission received after October 13, 2023 CANNOT be processed because of internal ENGIE processes.**

* Disclaimer: ENGIE reserves the right to fulfil or decline, at ENGIE's discretion, requests for documents for visa application support purpose.

Conference Venue & Accommodations

Conference Venue

PARKROYAL COLLECTION Pickering, Singapore

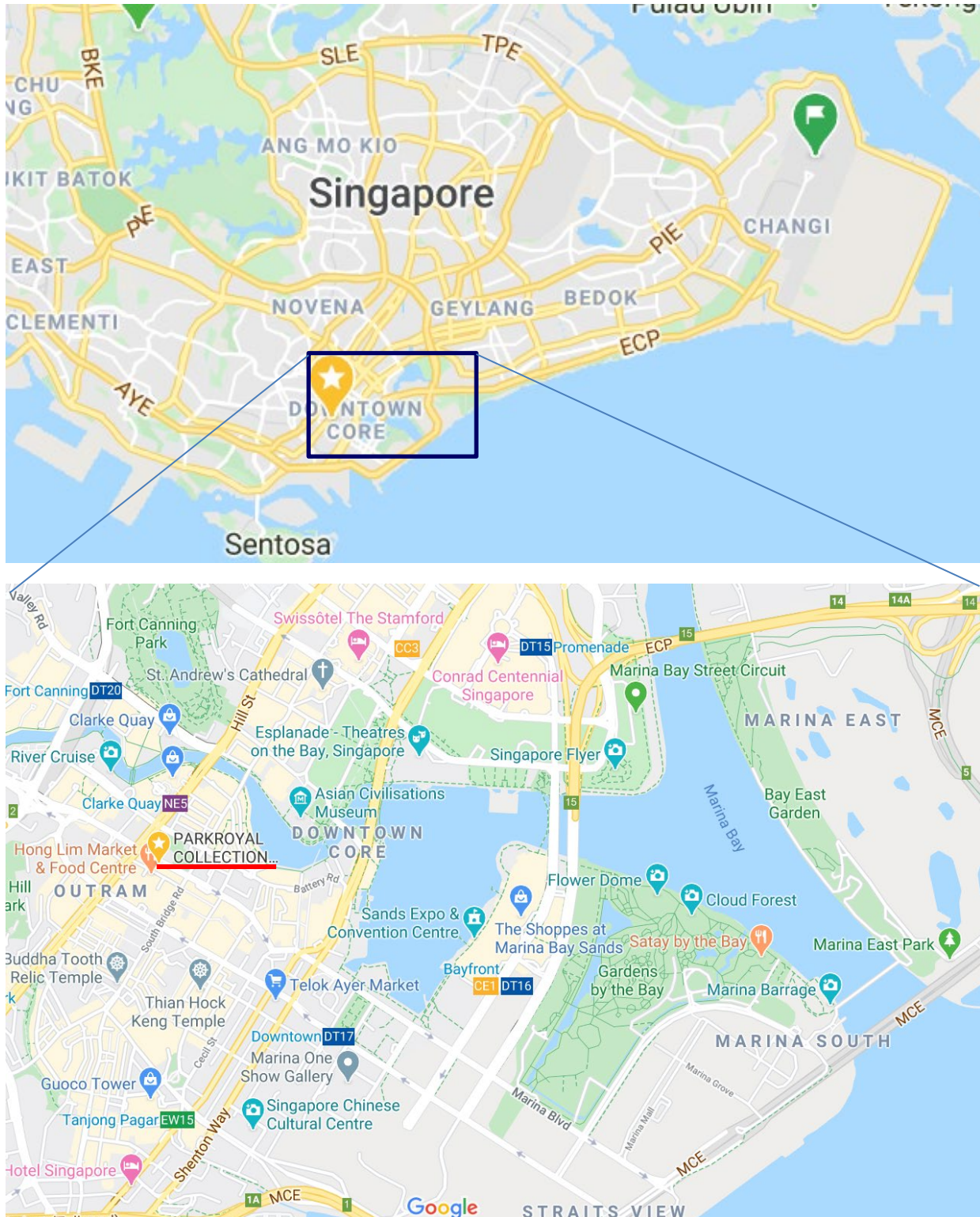
Location: 3 Upper Pickering St, Singapore 058289

Website: <https://www.panpacific.com/en/hotels-and-resorts/pr-pickering.html>



Location of the PARKROYAL COLLECTION Pickering

<https://goo.gl/maps/1WjAFBduAJghqPpb6>



Accommodations

PARKROYAL COLLECTION Pickering, Singapore

Location: 3 Upper Pickering St, Singapore 058289

Website: <https://www.panpacific.com/en/hotels-and-resorts/pr-pickering.html>

Discounted group rates are available.

This offer is on a first-come-first-served basis.

There is only a limited of rooms.

Please send Room Reservation Form directly to PARKROYAL COLLECTION Pickering through the below website.

URL: <https://book.passkey.com/e/50578049>

- ENGIE / IERE don't take any responsibility in room reservation of each participant.
- No room block is set at the hotel. Early reservation is recommended.
- For further details as to Guarantee & Cancellation Policy etc., please confirm the Hotel.



IERE Members List (as of August 1, 2023)

Australia	CSIRO		
Canada	Hydro-Québec	Powertech Labs	
China	CEPRI	GPG	NARI
Czech	CEZ		
Finland	Vaisala		
France	Enedis	ENGIE	
Germany	E.ON	EnBW	RWE TI
Hong Kong SAR	CLP		
Indonesia	PLN		
Iran	NRI		
Israel	IEC		
Japan	Chubu EPCO	Chugoku EPCO	CRIEPI
	FEPC	Fuji Electric	Hitachi
	Hokkaido EPCO	Hokuriku EPCO	IHI
	J-POWER	JAPC	Kansai EPCO
	Kyushu EPCO	MHI	Mitsubishi Electric
	NGK	Sumitomo Electric	Shikoku EPCO
	Tohoku EPCO	TEPCO	TOSHIBA
Malaysia	TNB		
Mexico	INEEL	Prolec GE	
Netherlands	TenneT		
Norway	SINTEF		
Pakistan	Karachi Electric		
Philippines	APC	MERALCO	
Singapore	SPPA		
South Africa	Eskom	PIESA	
South Korea	Hyundai Electric	KEPCO	KERI
	KOEN	KOMIPO	KOWEPO
	LS Electric		
Spain	NATURGY		
Taiwan	TPC		
US	EPRI	SwRI	

About ENGIE

Our group is a global reference in low-carbon energy and services. In response to the urgency of climate change, our ambition is to become the world leader in the zero carbon transition "as a service" for our customers, in particular global companies and local authorities. We rely on our key activities (renewable energy, gas, services) to offer competitive turnkey solutions.

With our 170,000 employees, our customers, partners and stakeholders, we are a community of Imaginative Builders, committed every day to more harmonious progress.

Turnover in 2019: 60.1 billion Euros. The Group is listed on the Paris and Brussels stock exchanges (ENGI) and is represented in the main financial indices (CAC 40, DJ Euro Stoxx 50, Euronext 100, FTSE Eurotop 100, MSCI Europe) and non-financial indices (DJSI World, DJSI Europe and Euronext Vigeo Eiris - World 120, Eurozone 120, Europe 120, France 20, CAC 40 Governance).

Please visit: www.engie.com

About IERE

IERE is an organization for exchanging electricity and energy related cutting-edge technologies and R&D information among its members from the electricity & energy supply industry, equipment provider businesses, academic research, government, etc. This unique platform is of great help for executives, senior managers, engineers, and researchers who are responsible for R&D and solutions. It is a worldwide, non-profit organization, established as "International Electric Research Exchange" in 1968.

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