

Malaysia



Institution of Civil Engineers

Hybrid event: RENEWABLE ENERGY

Alternative Sources of Renewable Power

Tuesday 27 September 2022

Venue: University of Malaya
(meeting room to be confirmed)

6:00 PM – 9:00 PM ([in person](#))

6.30 PM – 7.45 PM ([webinar](#))

Food and beverages are provided

Registration for [webinar](#) or [in-person](#)

For ICE members, graduates and students

Institution of Civil Engineers

ICE Malaysia first hybrid event

ICE Malaysia welcomes you to our first hybrid event since the pandemic.

You can join us in person or online. There will be food and beverages and opportunities to network with the speaker and participants for those attending in person.

Should you require any additional information or assistance, please do not hesitate to contact us.

Please note that the seats are limited and based on a first come, first serve basis.

The order of the event will be as of the following:

Time	Activity
6:00 PM	Registration
6.20 PM	Participants be seated
6:30 PM	Renewable Energy Talk
7.30 PM	Q & A Session
7.45 PM	Dinner starts
9.00 PM	Event Adjourned
End	

Institution of Civil Engineers

Hybrid event: Renewable Energy

The presentation begins by outlining the various types of turbines used to develop hydropower and covers various ways to create the head of water to drive the equipment. It then provides outline characteristics of 15 significant Malaysian Hydropower Developments. It then describes the seven other renewable energy production sources with examples of projects worldwide. Given the daily variability of solar, wind and tidal power production, it describes several methods currently being exploited to store energy produced in periods of low consumption for later use in periods of high grid system demand. Next, statistics on world power and energy production are provided. Finally, the current Malaysian Renewable Energy Production statistics and future production Targets on the pathway to Climate Change net-zero emissions are provided.

The presentation will cover the following power sources:

- **Hydropower** is the longest traditionally developed source
- **Geothermal Power** has also been developed significantly in some areas
- **Wind Power** has been used for centuries but not as a source of electricity
- **Solar power** has become the fastest growing source of renewable power
- **Tidal Power** has been developed in areas where high tidal ranges occur.
- New developments in **Tidal power** use ocean currents
- **Biomass** is a recently promoted development option
- **Biogas** is a renewable option that produces energy from animal or human sewage and food or agricultural waste.
- **Nuclear Power** in some regions is considered renewable
- **Pumped Storage Hydropower** has been in use from many decades and it is becoming increasingly in demand to provide water battery storage of intermittent renewable sources such as wind and solar to match grid system demand.

Speaker

Christopher John Hanson has spent over 50 years working in Consulting Engineering on the civil engineering aspects of Hydro Power involving some 40 projects in 20 countries around the world. These projects have included earth-fill, rock-fill, CFRD, concrete and RCC dams with head concentration developed by canals, tunnels and steel and wood-stave pipelines leading to surface and underground powerhouses.

He has managed the implementation, procurement and construction of 10 hydroelectric power stations, ranging in size from 375 kW to 250 MW, and has worked for extended periods in Canada, United Kingdom, Indonesia, Malaysia, Venezuela, the Caribbean, Sri Lanka, the Philippines, Nepal, and Nigeria, in addition to shorter-term assignments in China, Colombia, Lao PDR, Thailand, Ivory Coast, USA and the Comoros Islands. He has spent most of the past 20 years working in SE Asia mostly in Malaysia and Indonesia and is currently resident in Kuala Lumpur.

MALAYSIAN HYDRO PROJECTS

Temengor 348 MW 1978; Bersia 75 MW 1983; Kenering 120 MW 1983 Sungai Piah 70 MW 1993; Cameron refit 250 MW 2008 Bakun 2400 MW 2008; Chenderoh 12 MW 2016 Hulu Terengganu 265 MW 2016; TOTAL 3540 MW 2020



Christopher John Hanson
Project Manager
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