



**ISETS**  
INTERNATIONAL SOCIETY FOR  
ENERGY TRANSITION STUDIES

# ISETS NEWSLETTER 2023 Q3

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# KNOWLEDGE-SHARING

## XIANSHENG SUN, THE CHAIRMAN OF THE ISETS COUNCIL DELIVERED A SPEECH AT THE ESG GLOBAL LEADERS CONFERENCE

The ESG Global Leaders Conference was held from September 13 to 15 in Shanghai, with the theme of "Sustainable Economic Growth, Social Development and Environmental Protection". Xiansheng Sun, the Chairman of the ISETS Council, president of the International Energy Transition Institute and fourth Secretary-General of the International Energy Forum delivered a speech. In his address, Sun Xiansheng stated that China's renewable energy has made a significant contribution to global efforts in combating climate change, transitioning from being an active participant to a major contributor. Domestically, the decarbonization from renewable energy generation in 2022 amounted to approximately 2.26 billion tons, totaling a reduction of 16.26 billion tons over the decade from 2012 to 2022. The carbon reduction from the export of wind and photovoltaic products reached 570 million tons in 2022, contributing to a total reduction of 2.14 billion tons over the same decade. China has been actively promoting energy transformation, maintaining a leading position globally in the scale of renewable energy development.

He mentioned that ESG is considered the second financial report of enterprises, becoming a major strategy in the international investment market. It is crucial for financial institutions to continuously promote green, low-carbon transformation and sustainable development in the economy and industry. It is projected that by 2025, the scale of ESG investment will reach 53 trillion US dollars, accounting for one-third of the total invested assets under management globally. In his view, ESG investments can better encourage enterprises to invest in low-carbon technologies, turning carbon emissions into operating costs for businesses and enhancing the drive for companies to undergo low-carbon transformation.

# HOW DO REGULATORY ENVIRONMENTAL POLICIES PERFORM? A CASE STUDY OF CHINA'S TOP-10,000 ENTERPRISES ENERGY-SAVING PROGRAM

Xunpeng Shi, Binbin Tian, Longjian Yang, Jian Yu, Siyang Zhou

Even before China's commitment to carbon neutrality and peak in September 2020, many programs had been implemented to save energy. One such program was the “Action Plan for Energy Conservation and Low-Carbon for Ten Thousand Enterprises” (hereafter Top-10,000 Enterprises Energy-Saving Program, or Top-10,000 Program, or Program) launched in 2011, which targets high energy users. The official assessment of this program, which began during China's 12th Five Year Plan period (2011–2015), claimed that it had achieved its goals. However, there has been no precise measurement of how much it has contributed to China's total energy conservation achievements and how enterprises responded to it. Employing the regression discontinuity design approach and Chinese taxation survey data, this study represents a pioneering attempt to assess the energy savings resulting from this program. The primary methods employed by enterprises to save energy were enhancing energy efficiency and dynamically adjusting production scale. The results of our study suggest that regulatory environmental policies should not be hindered by short-term scale effects. Instead, further innovations are required to minimize the cost of energy savings.

## USING NARRATIVES TO INFER PREFERENCES IN UNDERSTANDING THE ENERGY EFFICIENCY GAP

Investing in energy efficiency is crucial for a low-carbon economy, particularly in the building sector. Despite various subsidy programmes, meeting energy targets is challenging because households do not invest sufficiently. Here we study the low numbers of energy efficiency retrofits carried out by homeowners. We use narratives, an emerging method based on open-ended survey responses, to identify the barriers and determinants behind renovation decisions. Using natural language processing, we transform narratives into quantifiable metrics. Whereas financial considerations are a major barrier for homeowners, their main reasons for renovating are not related to energy savings. Most homeowners delay energy-saving investments until their buildings require renovations. Co-benefits such as environmental concerns and comfort

gains are equally or more important than financial motivations. Many homeowners are unaware of existing policies and would favour reducing the bureaucracy of retrofits. Subsidies, although popular, are likely to be mistargeted. Effective policies should also consider institutional factors such as the bureaucratic burden and the accessibility of information.

## **THE WEATHER AFFECTS AIR CONDITIONER PURCHASES TO FILL THE ENERGY EFFICIENCY GAP**

Energy efficiency improvement is often hindered by the energy efficiency gap. This paper examines the effect of short-run temperature fluctuations on the Energy Star air conditioner purchases in the United States from 2006 to 2019 using transaction-level data. Results show that the probability of purchasing an Energy Star air conditioner increases as the weekly temperature before the transaction deviates from 20–22 °C. A larger response is related to fewer cooling degree days in the previous years, higher electricity prices/income/educational levels/age/rate of owners, more common use of electricity, and stronger concern about climate change. 1 °C increase and decrease from 21 °C would lead to a reduction of total energy expenditure by 35.46 and 17.73 million dollars nationwide (0.13% and 0.06% of the annual total energy expenditure on air conditioning), respectively. Our findings have important policy implications for demand-end interventions to incorporate the potential impact of the ambient physical environment.

## **BREAKING THE HARD-TO-ABATE BOTTLENECK IN CHINA'S PATH TO CARBON NEUTRALITY WITH CLEAN HYDROGEN**

Countries such as China are facing a bottleneck in their paths to carbon neutrality: abating emissions in heavy industries and heavy-duty transport. There are few in-depth studies of the prospective role for clean hydrogen in these 'hard-to-abate' (HTA) sectors. Here we carry out an integrated dynamic least-cost modelling analysis. Results show that, first, clean hydrogen can be both a major energy carrier and feedstock that can significantly reduce carbon emissions of heavy industry. It can also fuel up to 50% of China's heavy-duty truck and bus fleets by 2060 and significant shares of shipping. Second, a realistic clean hydrogen scenario that

reaches 65.7 Mt of production in 2060 could avoid US\$1.72 trillion of new investment compared with a no-hydrogen scenario.

## EVENTS IN Q3

# THE INAUGURAL ISETS CONFERENCE HELD TO ADDRESS ENERGY TRANSITION EFFORTS IN THE ASIA-PACIFIC



The inaugural international conference of the International Society for Energy Transition Studies (ISETS) was held in Bangkok from 16<sup>th</sup> to 18<sup>th</sup> October.

The conference, as part of the Asia Pacific Energy Week and a side event of the third Asian and Pacific Energy Forum, was co-hosted by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). Other co-organisers included the Economic Research Institute for ASEAN and East Asia (ERIA), Collaborative Innovation Center for Emissions Trading System at Hubei University of Economics, the Society for the Studies of Climate Finance, and Ember.

Professor Xunpeng (Roc) Shi, President of the ISETS executive committee, explained the history of ISETS and highlighted its mission of continuously and unbounded knowledge sharing, available to all those in need, regardless of their ability or willingness to pay.

Ms. Armida Salsiah Alisjahbana, Under-Secretary-General of the United Nations and Executive Secretary of the Economic and Social Commission for Asia and the Pacific (ESCAP), opened the Asia-Pacific Energy Week by recognising the pivotal role that think tanks and research institutes, including ISETS, play in facilitating Asia-Pacific's energy transitions.

*“It is impressive to see the extent to which you have managed to assemble expertise and diversity of stakeholders under the ISETS banner.” She said, and “We have joined hands with many ISETS members on these efforts, and we look forward to greater collaboration in the future.” She anticipated that “ISETS will evolve into a valuable hub of knowledge and collaboration, unwavering in its commitment to foster dialogue and effectively gather and share information on technologies, products, solutions and experiences.”*

Dr. Xiansheng Sun, the Chairman of the ISETS Council, explained ISETS's mandate, which is “to collectively steer the global energy ship towards a sustainable, inclusive, and equitable transition, one that embraces carbon neutrality as a shared goal.”

The ISETS conference gathered over 200 energy sector leaders, policy makers and experts, and the discussion highlighted the following issues most pertinent to Asia-Pacific's transition towards a clean and sustainable energy future.

Details about the conference come later.

# UPCOMING EVENTS

## Carbon Neutrality and Climate Finance Forum

### Call for participation

In order to facilitate a broader and more in-depth discussion on this issue, the 2<sup>nd</sup> High-level Forum on Carbon Neutrality and Climate Finance, jointly organized by the Energy Finance Professional Committee of the International Society for Energy Transition Studies (ISETS) and the Climate Finance Research Branch, and hosted by the Carbon Neutrality and Climate Finance Laboratory of the Virtual Economy and Data Science Research Center of the Chinese Academy of Sciences, will be held in Beijing on November 18, 2023. The forum will focus on the discussion of climate risks and related issues of socio-economic governance. We sincerely invite experts, scholars, and professionals from all walks of life to actively submit papers and participate in the conference.

The deadline for paper submissions is October 31, and there is no registration fee for this conference. Participants will be responsible for their own transportation and accommodation. Please submit your papers to [cncf2060@163.com](mailto:cncf2060@163.com).



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## *About ISETS*

The International Society for Energy Transition Studies (ISETS) is a worldwide non-profit professional organisation based in Australia, which has members in 50+ nations and more than ten international organisations.

ISETS was founded on 16 June 2020 through the Founding Declaration signed by a group of 31 energetic and internationally acclaimed professionals who have extensive experiences in energy, environment and other sustainable development issues.

ISETS aims to facilitate an equitable and inclusive transition of energy and relevant sectors toward a sustainable low-carbon future with consideration of economic development, social equity, and environmental stewardship through international partnerships.

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