

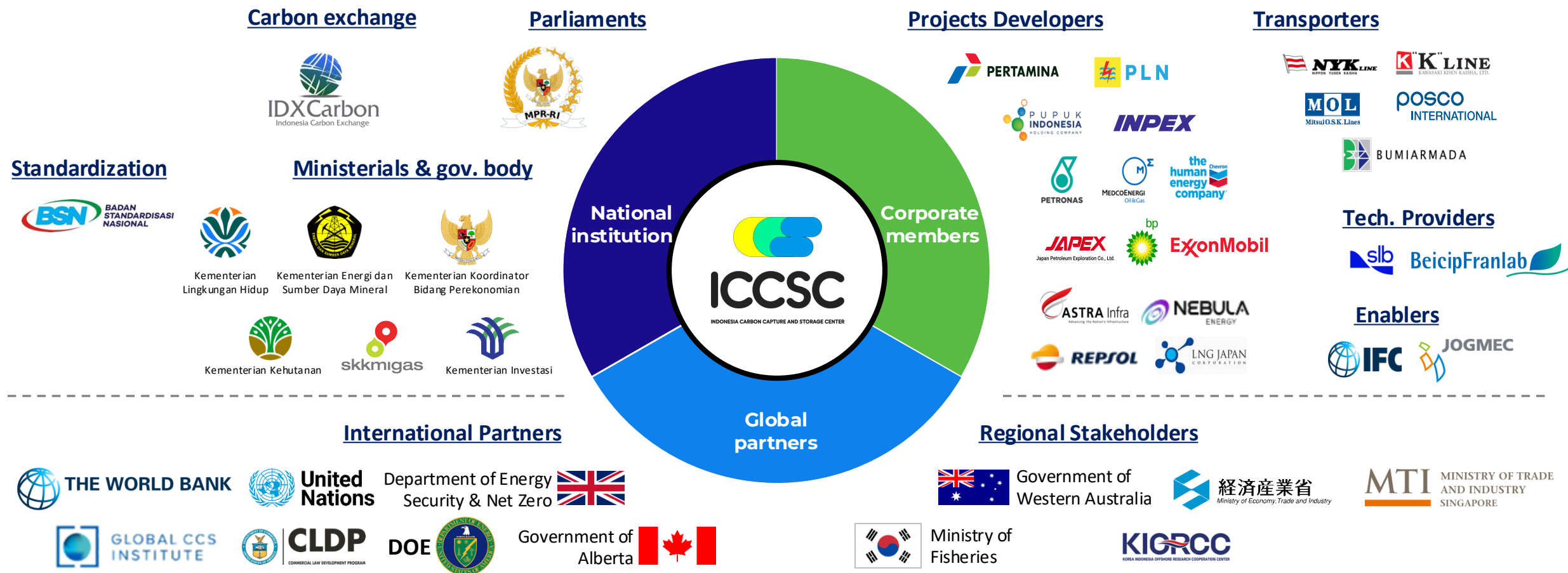
# Driving Indonesia's Path to be the Regional CCS Hub

**ADB Webinar: Emerging Net Zero Technologies – Spotlight on CCS**

April 23<sup>rd</sup> 2025


















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# Indonesia CCS Center (ICCSC) plays a vital role in positioning Indonesia as a regional CCS hub, fostering collaboration among stakeholders



ICCSC currently is partnering with **23 corporate members** across the CCS value chain – serving as a bridge among stakeholders

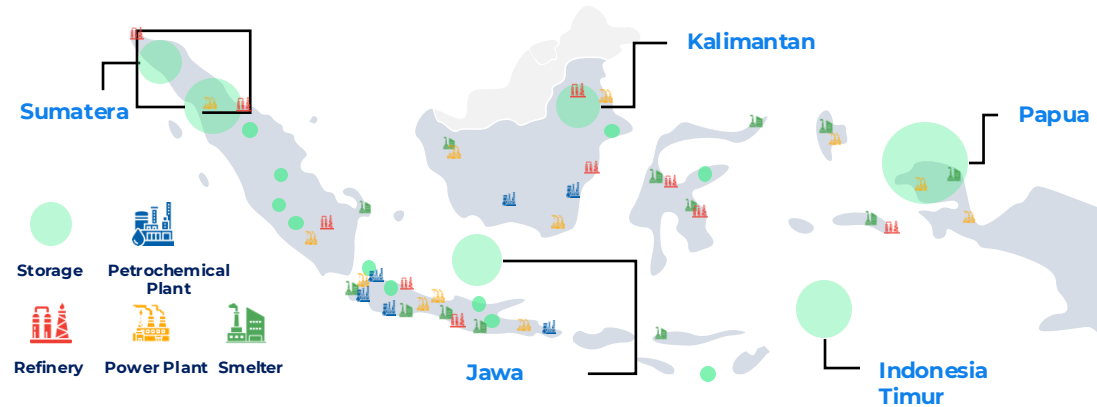
# In 2024, ICCSC successfully conducted several activities driving Indonesia as regional leader

Key Focus Area	Highlighted Activity		Participants
 <b>Public &amp; Stakeholder Acceptance</b>	 <b>US CCS Study Tour</b> <small>MANAGEMENT WITH CCS HUB IN A CIRCULAR ECONOMY</small>	To visit operational CCS facilities and engage in direct discussions with government authorities and organizations	
	 <b>International &amp; Indonesia CCS (ICCS) Forum 2024</b>	To explore a broader range of topics, innovative strategies, and collaborative initiatives for CCS implementation	 <b>450+ Stakeholders</b> <b>2000+ Visitors</b> <b>50+ Speakers</b> <b>40+ Exhibitors</b>
 <b>Policy Advocacy and Engagement</b>	 <b>SNI Adoption and ISO/TC 265 CCS Annual Meeting</b>	To bring together 100 experts from over 40 countries to discuss key topics in ISO/TC 265	
	 <b>1st Indonesia CCS (SOE) Roadmap Development</b>	To collaborate with Kemenko Marves (CMMAI) and the World Bank in announcing Indonesia's CCS Roadmap	
	 <b>FGD Kementerian Perindustrian</b>	To discuss CCS implementation in the upstream chemical industry with key government and industry stakeholders	
 <b>Domestic &amp; Cross-Border CCS Market Activation</b>	 <b>COP 28 and Carbon Management Challenge</b>	To share insights on the strategic role of CCS technology in advancing carbon management projects	
	 <b>ICCSC Technology Day</b>	To showcase advancements in CCS technology and foster collaboration among industry experts and stakeholders	

# Indonesia plans to leverage its advantages, such as **large storage capacity** and **strategic location**, to implement CCS as a step towards addressing national emission reductions

## Large storage capacity

Storage capacity **~600 Gt CO<sub>2</sub>**, capable of fulfilling domestic and regional demands



## Strategic location

Strategic position within Asia-Pacific allows for **cross-border CCS operations**

## Strong downstream industries

Great potential for **low-carbon products** development

## Rapid development

**15 pre-projects** (total investments ~43B USD) are currently under exploration, with a new Pertamina – Exxon project partnership announced

## Enhanced Regulatory Framework

e.g., **Presidential Decree 14/2024** on CCS, **Presidential Decree 98/2021** on Carbon Pricing

## CCS Center

Indonesia owns the only established **CCS Center** in Asia

**As part of this initiative, Indonesia has developed its Carbon Capture and Storage Roadmap, providing a unified national framework for all relevant stakeholders.**

Source: ExxonMobil (2021), Rystad Energy (2022), LEMIGAS (2023), VOI (2023), MEMR Press Release (2024), ICCSC Analysis



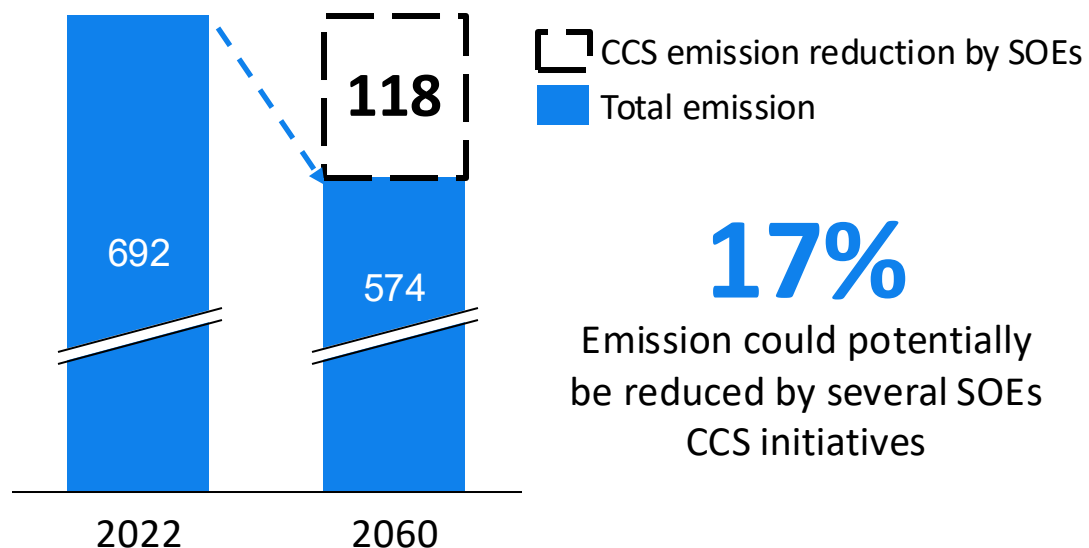
# Indonesia already has a set of **policies and regulatory frameworks** to support CCS deployment

Current Policy Instruments			Actively Progressing
<p><b>Presidential Regulation 14/2024 on CCS</b></p> <p>Regulates the implementation of CCS by beyond, including injection operations in saline aquifers, cross-border CCS operations, detailed MRV process, CCS Task Force formation, and emissions trading</p>	<p><b>Ministry of Energy &amp; Mineral Resources Regulation 2/2023</b></p> <p>Regulates CCS and CCUS implementation in upstream oil and gas activities, including the enforcement, implementation, MRV, and economic provisions</p> <p><b>MEMR 16/2024 in Injection Working Area</b></p> <p>Including the working area preparation, tenders, permits, implementation, reporting, POD, and other technical provisions</p>	<p><b>Presidential Regulation 98/2021 on Carbon Pricing</b></p> <p>Regulates carbon pricing to achieve NDC, includes the price administration, transparency framework, and guidance on financing</p>	<p><b>International Collaborations</b></p> <ul style="list-style-type: none"> <li>• <b>Partnerships</b> with UN Carbon Removal Lead, US DOE, Norway Embassy, Canada (University of Calgary), Australia (Global CCS Institute)</li> <li>• <b>G2G bilateral MoU for cross-border CCS operations</b> (current discussion with regional countries; Lol with Singapore)</li> </ul>
<p><b>Financial Authority Regulation 14/2023</b></p> <p>Regulates carbon trading in the Indonesia Carbon Exchange (IDXCarbon)</p>	<p><b>National Standards</b></p> <p>The published of technical standard for CCS operation by adopting ISO/TC 265: (focusing on geological storage)</p>	<p><b>SKK Migas Working Guidelines (PTK-070/SKKIA0000/2024/S9)</b></p> <p>On the management of CCS and CCUS at the oil and gas working areas of the cooperation contract contractors</p>	

# National Advantage - Indonesia has the largest storage capacity in the region, driven by national SOEs to maximize its potential

*CCS is expected to cut CO<sub>2</sub> emissions by 118 MTPA by 2060 driven by SOE initiatives*

Indonesia's total CO<sub>2</sub> emission level 2022 vs 2060, (MTPA)



**15**

# of CCS pre-projects in Indonesia

**~\$43 bn**

Investments in CCS projects

**~600 GT**

CO<sub>2</sub> storage capacity<sup>1</sup>

*Several Public Private Partnership (PPP) had been announced*



**ExxonMobil**



Pertamina-Exxon Mobil collaboration at Sunda Asri basin with **3 GT CO<sub>2</sub> storage** potential

Pertamina-Chevron New Energies joint-study for CCS implementation in East Kalimantan Basin



**2 Giga Watt** of current PLN capacity will be integrated with CCS Facility in 2040 including e.g., PLTU Suralaya, PLTU Indramayu etc.




**1,595 MTPA Blue Ammonia** capacity planned by Pupuk Indonesia from Aceh and East Indonesia plant in 2029 - 2030


1. Consist of ~573 GT saline aquifer storage and 4.8 GT depleted reservoir storage; Source: Pertamina, PLN, Pupuk Indonesia, ICCSC analysis


# Regional Market – Cross border CCS will activate domestic market, however strong government support are required to win regional tender

*Indonesia's strategic positioning enables diverse cross-border collaborations, with the **Singapore bilateral partnership** poised to catalyze domestic markets and generate approximately **USD 200M<sup>1</sup>** in annual revenue.*

Neighboring countries have implemented carbon pricing with **limited storage capacity**

 2030 Captured target: **6-12 MTPA**

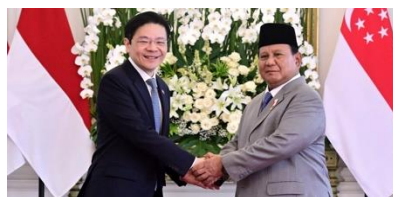
 2030 Captured target: **11.2 MTPA**

 2030 Captured target: **2 MTPA**

Private sector investments from companies already operating domestically:



## Recent Status Indonesia – Singapore Bilateral Agreement



*“We also agreed to follow up on our collaboration in carbon capture and storage” – **President Prabowo Subianto***

- 1) **Feb 2024**, Indonesia and Singapore established CCS Cross Border collaboration through a Letter of Intent (LOI).
- 2) **Nov 2024**, President Prabowo Subianto welcomed Prime Minister Lawrence Wong to affirm CCS Cross Border Collaboration.
- 3) **Feb 2025**, Indonesia Singapore bilateral workshop by relevant ministries to continue crucial aspects including storage, capture and environmental guidance
- 4) **Q4 2025** Expected G to G Agreement completed for Singapore tender requirement

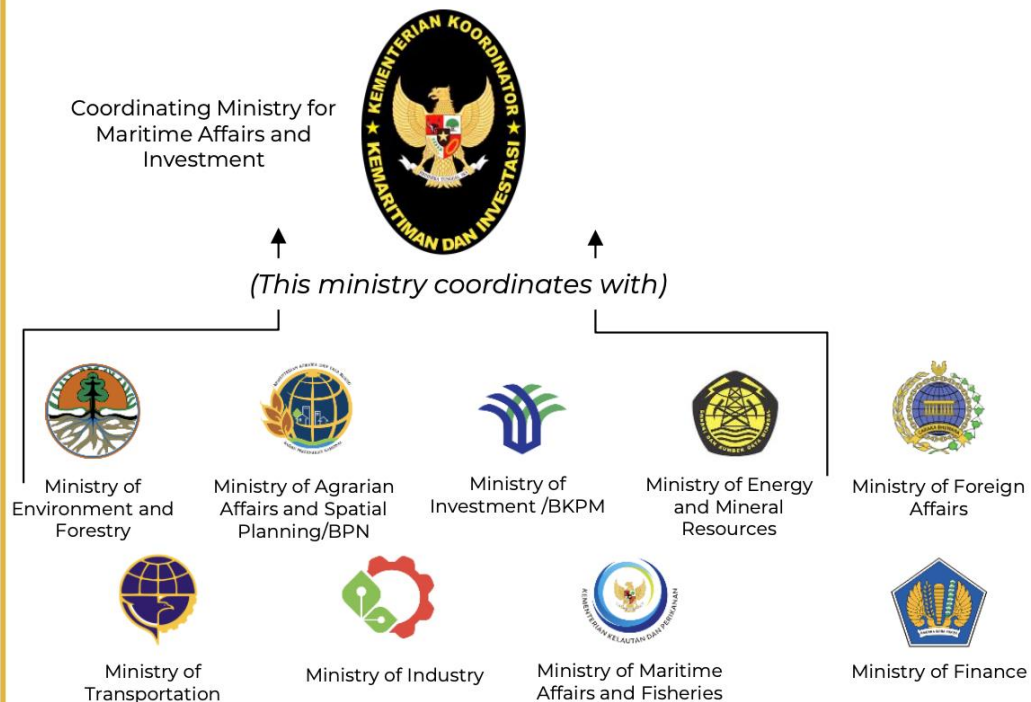
1. The S-Hub consortium signed a MoU with Singapore EDB which outlines the guidelines to capture and permanently store around **2.5 million tons of CO<sub>2</sub> annually** in Singapore by **2030** and assume **S\$ 80/tCO<sub>2</sub>** of carbon tax.  
Source: MTI Singapore (2023), Reuters (2023), ICAP (2023), EDB (2024), ExxonMobil (2024), The Business Times (2024), Shell (2024), Southeast Asia Infrastructure (2024), ICCSC analysis

# The new appointed Indonesia ministries has brought about a transition in leadership, including key roles that will support CCS in the coming years

## "Kabinet Indonesia Maju 2019-2024"

Ministries involved in the implementation of CCS activities

The Coordinating Ministry for Maritime Affairs and Investment (CMMAI), together with the Ministry of Energy and Mineral Resources (MEMR), oversees the implementation of CCS in Indonesia



## "Kabinet Merah Putih 2024-2029"

Further announcements regarding the appointment of specific ministries for the CCS agenda

In the new cabinet, the CMMAI has been restructured, with its functions integrated into other ministries to streamline governance

New ministries now involved:





## Indonesia is currently advancing its progress on CCS deployment

... with several competitive advantages to be the regional CCS hub with the vast storage capacity, location proximity, and enhanced regulation in-place.

## Indonesia CCS Center opens to collaborate with all the stakeholders across CCS hub value chain

... to create added value for Indonesia CCS hub deployment through its membership connection.



# Takeaway messages

# Thank you!

## Indonesia CCS Center

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