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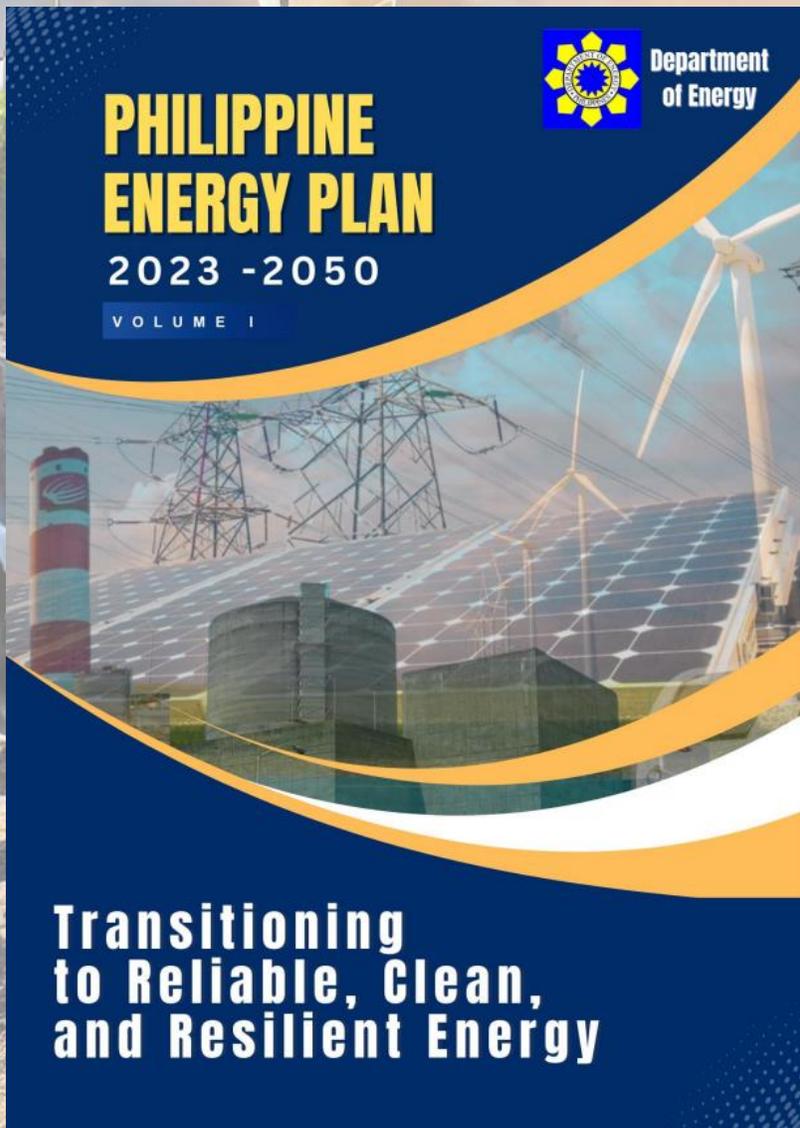
# **DEPARTMENT OF ENERGY PERSPECTIVE ON HYDROGEN**

**DIR. PATRICK T. AQUINO, CESO III**  
**ENERGY UTILIZATION MANAGEMENT BUREAU**





# PHILIPPINE ENERGY PLAN 2023-2050: ENERGY SECTOR STRATEGIC DIRECTION



**A**

**ACCESS TO AFFORDABLE ENERGY**

**R**

**RELIABILITY AND RESILIENCY**

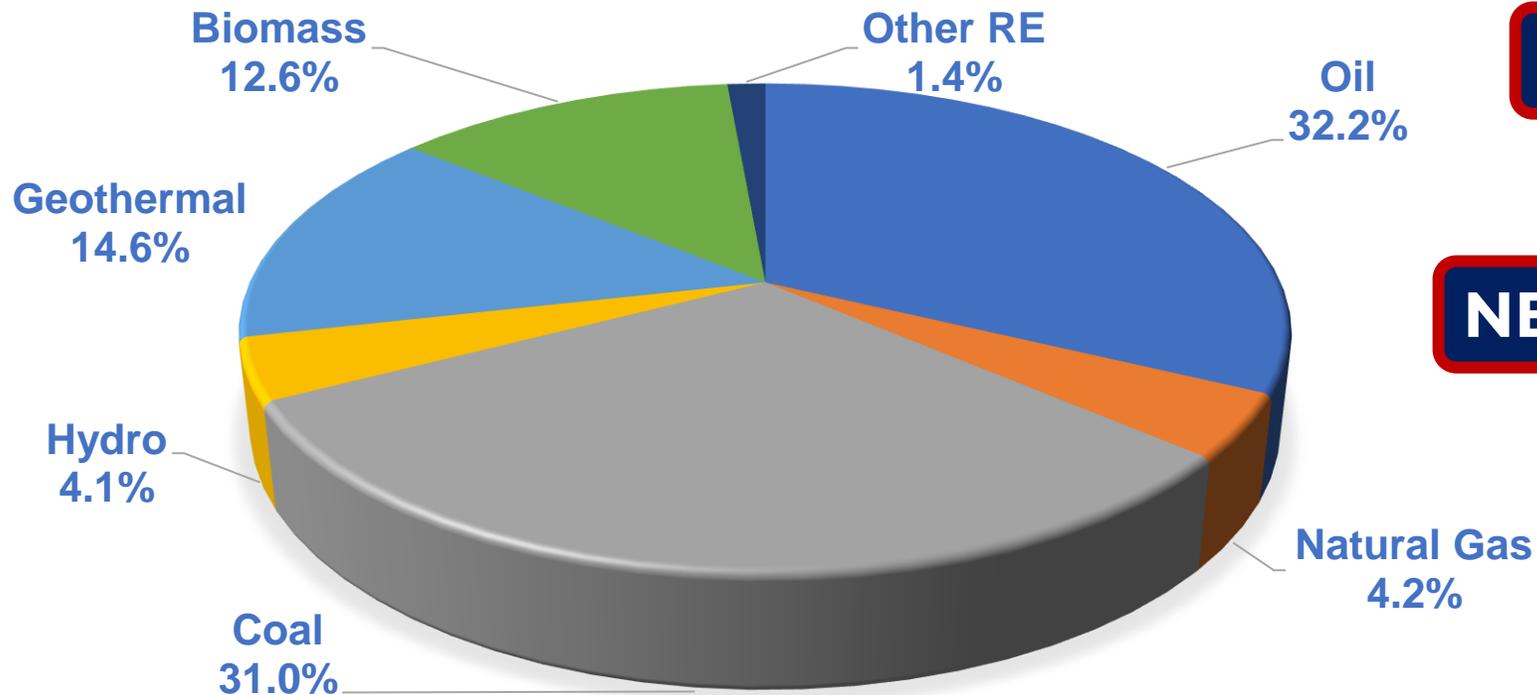
**C**

**CLEAN AND SUSTAINABLE ENERGY**



## TOTAL PRIMARY ENERGY MIX 2022

**61.6 MTOE**



**INDIGENOUS**

**49.4%**  
**30.4 MTOE**

**NET IMPORTED**

**50.6%**  
**31.1 MTOE**

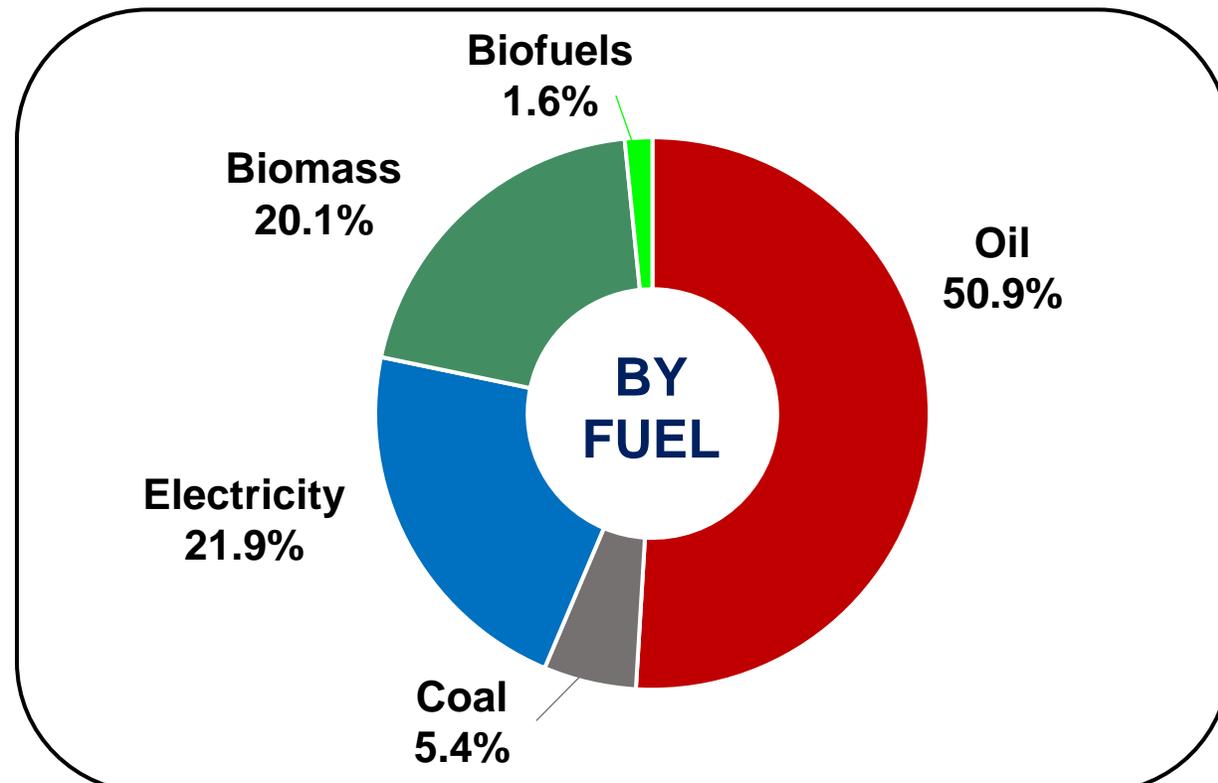
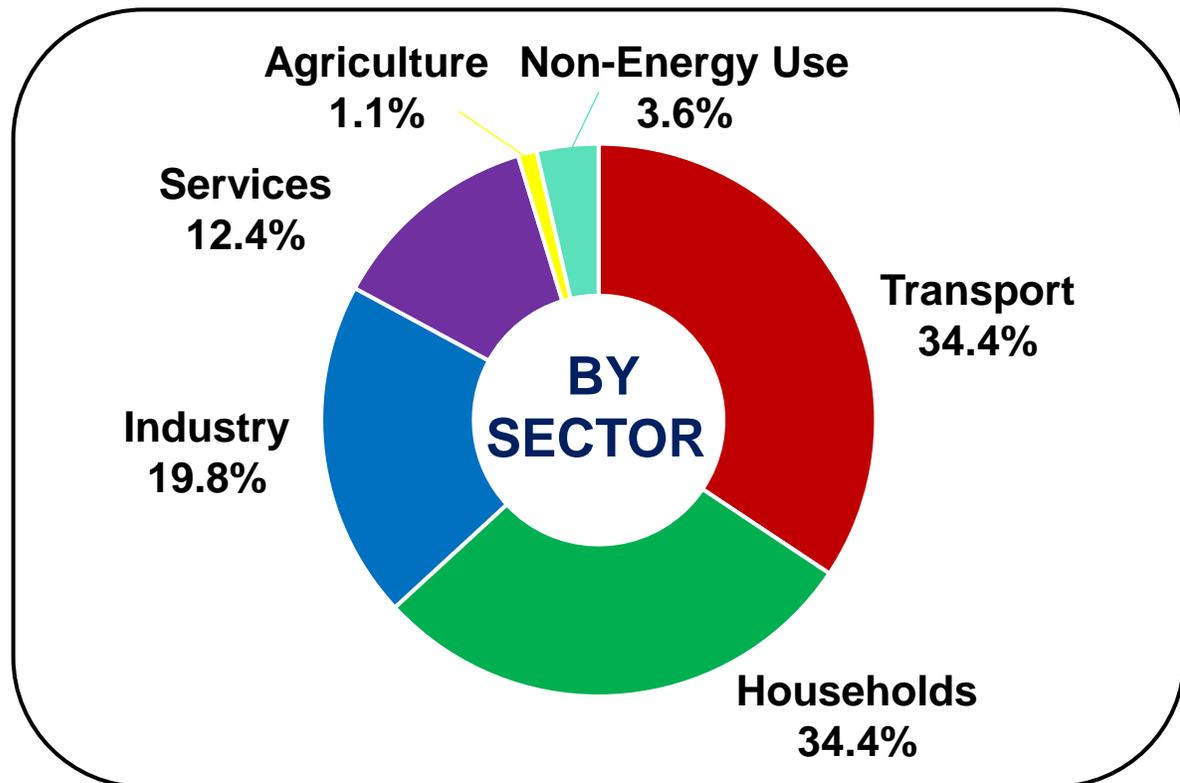
**RE SHARE**

**32.6%**  
**20.0 MTOE**



## TOTAL FINAL ENERGY CONSUMPTION 2022

35.9 MTOE





# PHILIPPINE ENERGY PLAN 2023-2050: ALTERNATIVE FUELS AND ENERGY TECHNOLOGIES

## HYDROGEN SIGNIFICANCE FOR ENERGY TRANSITION

### Activities to develop the Hydrogen and its derivatives as an alternative fuel

2023 - onwards

2023 - 2024

2023 - onwards

2028 - 2035



#### Pursue Policy and Research Development

- Establish a Steering Committee for Hydrogen, Hydrogen derivatives, and other Emerging Fuels and Technologies
- Conduct Cost-Benefit-Analysis (CBA) and Feasibility Studies on hydrogen and hydrogen derivatives
- Pursue further research study on the viability of hydrogen and hydrogen derivatives in collaboration with the Department of Science and Technology
- Establish a pilot project for hydrogen and hydrogen derivatives specific for power generation



#### Establish a National Policy Framework

- Establish the necessary policy, legal, and regulatory framework for the development of hydrogen and hydrogen derivatives technology and fuel
- Create standards for quality and performance, public safety and operations, and infrastructure and facility for hydrogen and hydrogen derivatives
- Develop and implement safety practices and procedures in operating and handling hydrogen and hydrogen derivatives
- Develop a Hydrogen and Hydrogen Derivatives Masterplan



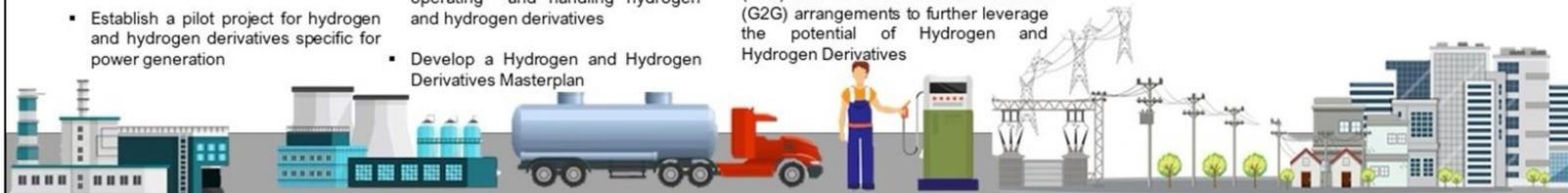
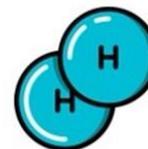
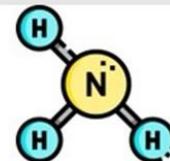
#### Institutionalize Development Partnership

- Engage in development partnerships with countries that utilize Advance Research and Development (R&D) i.e., scientific and technological researches and demonstration or pilot projects for Hydrogen and Hydrogen Derivatives as an energy source
- Conduct capacity building activities and technology transfers with countries utilizing Hydrogen and Hydrogen Derivatives
- Establish Public-Private Partnerships (PPP) and Government-to-Government (G2G) arrangements to further leverage the potential of Hydrogen and Hydrogen Derivatives



#### Develop Support Infrastructures

- Encourage private sector investment
- Facilitate the establishment of necessary infrastructure facilities for Hydrogen and Hydrogen Derivatives:
  - Production / Importation
  - Storage
  - Transportation/ Distribution
  - Filling / Fueling stations



#### GREEN HYDROGEN

- Hydrogen produced using renewable energy such as wind, solar, hydropower, and geothermal.
- Net zero carbon dioxide emission



# DOE INITIATIVES ON HYDROGEN

## HYDROGEN ENERGY GUIDELINES

### DEPARTMENT CIRCULAR: PROVIDING A NATIONAL POLICY AND GENERAL FRAMEWORK, ROADMAP, AND GUIDELINES FOR HYDROGEN IN THE ENERGY SECTOR

 <p>Republic of the Philippines <b>DEPARTMENT OF ENERGY</b></p> <p>DEPARTMENT CIRCULAR NO. _____</p> <p><b>PROVIDING A NATIONAL POLICY AND GENERAL FRAMEWORK, ROADMAP, AND GUIDELINES FOR HYDROGEN IN THE ENERGY SECTOR</b></p> <p><b>WHEREAS</b>, Section 2 of Republic Act No. (RA) 7638, as amended, or the "Department of Energy (DOE) Act of 1992" declares it the policy of the State, among others, to ensure a continuous, adequate, and economic supply of energy with the end in view of ultimately achieving self-reliance in the country's energy requirements through the integrated and intensive exploration, production, management, and development of the country's indigenous energy sources;</p> <p><b>WHEREAS</b>, Section 4 of RA 7638, as amended, mandates the DOE to prepare, integrate, coordinate, supervise and control plans, programs, projects and activities of the Government related to energy exploration, development, utilization, distribution, and conservation;</p> <p><b>WHEREAS</b>, Section 5 of RA 7638, as amended, provides that the DOE shall have the power to, among others, "Establish and administer programs for the exploration, transportation, marketing, distribution, utilization, conservation, stockpiling and storage of energy resources of all forms, whether conventional or nonconventional. Assess the requirements of, determine priorities for, provide direction to, and disseminate information resulting from energy research and development programs for the optimal development of various forms of energy production and utilization technologies";</p> <p><b>WHEREAS</b>, Section 5 (g) of RA 7638 further authorized the DOE to formulate and implement programs, including a system of providing incentives and penalties, for the judicious and efficient use of energy in all energy consuming sectors of the economy;</p> <p><b>WHEREAS</b>, Section 2 of Presidential Decree No. 87, s. 1972 (PD 87), as amended, otherwise known as the "Oil Exploration and Development Act of 1972" declares it to be the policy of the State "To hasten the discovery and production of indigenous petroleum through the utilization of government and/or private resources, local and foreign, under the arrangements embodied in this Act which are calculated to yield the maximum benefit to the Filipino people and the revenues to the Philippine Government for use in furtherance of national economic development, and to assure just returns to participating private enterprises, particularly those that will provide the necessary services, financing, and technology and fully assume all exploration risks";</p> <p><b>WHEREAS</b>, Section 37 of RA 9136 or the "Electric Power Industry Reform Act of 2001 (EPIRA), provides that the DOE, in addition to its existing powers, shall among others, "Formulate policies for the planning and implementation of a comprehensive program for the efficient supply and economical use of energy consistent with the approved national economic plan and with policies on environmental protection and conservation and maintenance of ecological balance, and provide a mechanism for the integration, rationalization, and coordination of the various energy programs of the Government and ensure the reliability, quality, and security of supply of electric power";</p> <p><b>WHEREAS</b>, RA 9513 or the "Renewable Energy (RE) Act of 2008", declares it the policy of the State to "increase the utilization of RE by institutionalizing the development of national and local capabilities in the use of RE systems, and promoting its efficient and cost-effective commercial application by providing fiscal and non-fiscal incentives";</p> <p>DC Providing a National Policy and General Framework, Roadmap, and Guidelines for Hydrogen in the Energy Sector Page 1 of 14</p>	<p>privates enumerated therein to RE... ...to and to the extent of the... ...nd comments solicited from the... ...23 in the National Capital Region, ...Shop (EVOS) Act" provides for the... ...tion, transmission and distribution</p> <p>energy and Conservation (EEC) Act", ...introducing and institutionalizing ...vation, including the promotion of ...e utilization of energy efficiency and ...among various government agencies</p> <p>nergy Research and Policy Institute ...ERPI for the enhancement of the ...pment;</p> <p>Vehicle Industry Development Act ...e and support innovation in clean, ...gress and human development by ...on and other alternative energy</p> <p>ers the role of hydrogen, as another ...Philippines, as it has been globally ...ations, including distributed power, ...enger and freight vehicles, among</p> <p>pecial Order No. SO2020-11-0041 ...FEC), tasked to conduct a study on ...ill as the possibility of hydrogen as</p> <p>ment Circular No. DC2023-04-0008, ...h the Electric Power Industry", in ...ergy storage system (ESS) as an ...ower system;</p> <p>partment Circular No. DC2023-11- ...se Contracts for the Exploration, ...recognizes that the exploration, ...rned by PD 87, as amended, and ...nces and procedures issued by the ...velopment and production;</p> <p>s, if optimally developed, will play a ...reducing dependence on imported ...arbon future;</p> <p>partment Circular, the definition of</p> <p>ap, and Page 2 of 14</p>	<p>all existing issuances to ensure the ...development and investments in</p> <p>nd comments solicited from the ...23 in the National Capital Region, ...Shop (EVOS) Act" provides for the ...tion, transmission and distribution</p> <p>premises, the DOE hereby issues, ...nd roadmap for the development and</p> <p>SIONS ...known as the "Hydrogen Energy</p> <p>fforts to achieve a more sustainable ...duction of greenhouse gas (GHG) ...e energy transition as an innovation ...ious applications in the power, ...national policy framework is centered</p> <p>nd increase utilization of indigenous ...nd its derivatives thereby reducing ...rty's vulnerability to energy supply ...y market.</p> <p>acceleration of RE, alternative fuels ...asures supporting the initiatives ...Nationally Determined Contribution</p> <p>nt. Drive innovation in the industry ...nology institutions in undertaking ...emonstration and pilot projects, ...n, and strengthen capacity-building</p> <p>accelerate the development of the ...a financing program and investment ...cal and non-fiscal incentives and ...chanisms.</p> <p>lar covers all activities related to the ...ecommissioning, and disposal of ...development, production, storage, ...nergy resource. <i>Provided That</i>, all ...ent of native hydrogen and native ...visions implementing PD 87.</p> <p>partment Circular, the definition of</p> <p>ap, and Page 3 of 14</p>
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### ENERGY SECURITY

- Diversify energy sources
- Increase use of indigenous resources
- Reduce dependence on imported oil



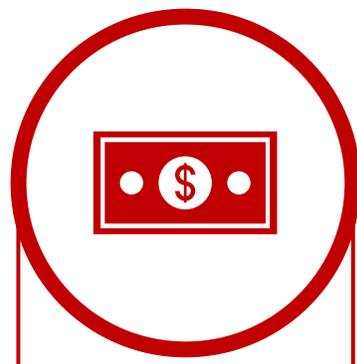
### ENVIRONMENTAL SUSTAINABILITY

- Promote renewable energy (RE), alternative fuels, and emerging technologies
- Intensify EEC measures
- Support Paris Agreement commitments



### RESEARCH AND TECHNOLOGICAL DEVELOPMENT

- Drive innovation through collaboration
- Implement technology demonstration and pilot projects
- Encourage technology transfer and adoption
- Strengthen capacity-building programs



### ACCESS TO FINANCING AND INVESTMENTS

- Formulate sustainable financing programs
- Develop an investment roadmap
- Establish fiscal and non-fiscal incentives
- Institute government financial support mechanisms



# DEPARTMENT CIRCULAR:

PROVIDING A NATIONAL POLICY AND GENERAL FRAMEWORK, ROADMAP,  
AND GUIDELINES FOR HYDROGEN IN THE ENERGY SECTOR

## GENERAL PROVISIONS

### Scope and Coverage

- RESEARCH
- DEVELOPMENT
- PRODUCTION
- STORAGE
- TRANSMISSION
- DISTRIBUTION
- UTILIZATION

RELATED TO:  
**ACTIVITIES**

INVOLVING:

- ESTABLISHMENT
- CONSTRUCTION
- OPERATION
- MAINTENANCE
- DECOMMISSIONING
- DISPOSAL

#### NOTE:

The **guidelines** for the **exploration, development, and production of Native Hydrogen** shall be **administered** by the DOE, through its **Energy Resources Development Bureau (ERDB)**, following the provisions of PD 87 and the corresponding rules and regulations.



# DEPARTMENT CIRCULAR: PROVIDING A NATIONAL POLICY AND GENERAL FRAMEWORK, ROADMAP, AND GUIDELINES FOR HYDROGEN IN THE ENERGY SECTOR

## HYDROGEN ENERGY VALUE CHAIN

### PRODUCTION

#### CLASSIFICATION

- Energy Resources: RE, nuclear, fossil fuels, grid electricity, chemical reactions.

#### SPECIAL CONSIDERATIONS

- Preference for RE projects (green hydrogen and derivatives).
- Recognition of nuclear energy projects under RA11285 or EEC Act.

### TRANSMISSION, DISTRIBUTION, AND STORAGE

#### TRANSPORTATION and STORAGE

- Compressed form, conversion to derivatives (ammonia, liquid and solid carriers).
- Storage systems: tanks and underground systems

#### TRANSMISSION and DISTRIBUTION

- Dedicated pipelines, chemical carriers, rail, maritime systems, fueling stations.



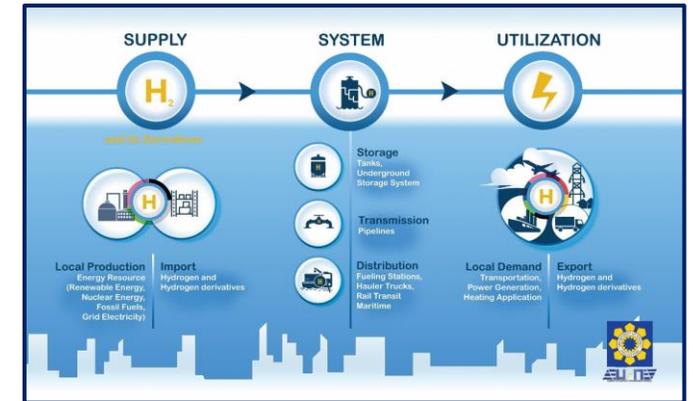
### UTILIZATION

#### POWER GENERATION and ELECTRICITY STORAGE

- Grid supply, backup, off-grid supply, industrial scale storage.
- Co-firing with hydrogen derivatives, multigeneration systems.

#### HYDROGEN ENERGY STORAGE SYSTEM (HESS):

- Utilizes hydrogen gas for energy storage



Annex A: Hydrogen Energy Value Chain

### NON-POWER APPLICATIONS:

- Heating for Industrial & Commercial Sectors
- Transportation Sector

### GLOBAL STRATEGY:

- Contribution to global decarbonization
- Importance in supplementing domestic demand and utilizing surplus RE.



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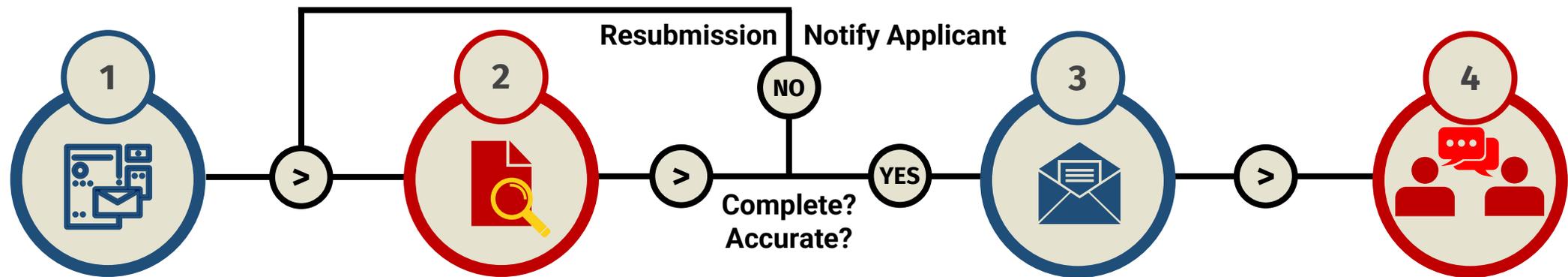
## NOTICE PRIOR TO ENGAGEMENT IN HYDROGEN ENERGY INDUSTRY ACTIVITY

### FILING A NOTICE:

- Who may avail: All hydrogen energy industry participants

### EXISTING HYDROGEN ENERGY PROJECTS:

- Compliance with the procedures within one hundred eighty (180) calendar days



- Submission of Letter of Intent with Supporting Documents of the Hydrogen Energy Industry Participant

- Evaluation of Completeness and Correctness of Documents

- Issuance of Acknowledgement Letter to Hydrogen Energy Industry Participant

- Endorsement of Documents to appropriate DOE Bureau



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## INCENTIVES IN SUPPORT OF HYDROGEN IN THE ENERGY SECTOR

### GREEN HYDROGEN PROJECTS FOR POWER GENERATION:

- Income Tax Holiday
- Exemption from Duties on RE Machinery, Equipment, and Materials
- Special Realty Tax Rates on Equipment and Machinery
- Net Operating Loss Carry-Over (NOLCO)
- Corporate Tax Rate
- Accelerated Depreciation
- Zero Percent Value Added Tax Rate
- Tax Exemption of Carbon Credits
- Tax Credit on Domestic Capital Equipment and Services Related to the Installation of Equipment and Machinery

### HYDROGEN ENERGY IN TRANSPORT SECTOR USING FUEL CELLS:

- Exemption from duties on completely built HFS for 8 years
- Evaluation-based incentives for manufacture and assembly of HFS, parts, components, and operation of HFS

RA 9513  
(RE Act of 2008 and IRR)

RA 11285 (EEC Act)

RA 11697 (EVIDA)

RA 11534 (CREATE Act)

### PROJECTS INVOLVING HYDROGEN PRODUCTION FROM NUCLEAR ENERGY:

- Income Tax Holiday (ITH)
- Customs Duty Exemption on Importation of Capital Equipment, Raw Materials, Spare Parts, or Accessories
- VAT Zero-Rating and Exemption
- Other incentives under the CREATE Act

### PROJECTS UNDER STRATEGIC INVESTMENT PRIORITY PLAN (SIPP) AND FOR VARIOUS HYDROGEN ENERGY ACTIVITIES:

- Income Tax Holiday (ITH)
- Special Corporate Income Tax (SCIT) for export enterprises
- Enhanced Deductions
- Customs Duty Exemptions on Imports
- Value-Added Tax (VAT) Zero Rating and Exemption



# DEPARTMENT CIRCULAR:

PROVIDING A NATIONAL POLICY AND GENERAL FRAMEWORK, ROADMAP,  
AND GUIDELINES FOR HYDROGEN IN THE ENERGY SECTOR

## INFORMATION, EDUCATION AND COMMUNICATION ACTIVITIES

1

### NATIONAL AWARENESS PROGRAM:

- DOE will create a program to increase awareness about hydrogen energy programs and initiatives on a national scale.

2

### ADVOCACY INITIATIVES:

- Actively promote and advocate for the key elements outlined in the Department Circular.

3

### STAKEHOLDER PARTNERSHIPS:

- Pursue collaborations with relevant stakeholders to enhance the impact awareness and advocacy efforts.



# Thank you.

[www.doe.gov.ph](http://www.doe.gov.ph)

[doe.eumb@gmail.com](mailto:doe.eumb@gmail.com)

