



# The CCS Global Group

TORONTO  
LONDON

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## ***Advancing commercialization of Hydrogen and Fuel Cell technologies, a part of the Energy mix, through International Cooperation on Regulations, Codes and Standards***

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The CCS Global Group

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## Topics

- CCS Introduction
- Hydrogen, a part of the energy mix
- International Cooperation on Regulations, Codes and Standards
- Discussion of the challenge

## CCS – Introduction

### General

- Established in 1977, the CCS professionals offer decades of experience in providing strategic advice to government and industry in:
  - Regulations, Codes & Standards – standards development, compliance and harmonization
  - Focus on Hydrogen and Fuel Cell technologies.

### Participation in Industry associations

- Board member of Canadian Hydrogen and Fuel Cell Association
- NEW IG Member of the European Joint Technology Initiative (JTI) for FCH Technologies

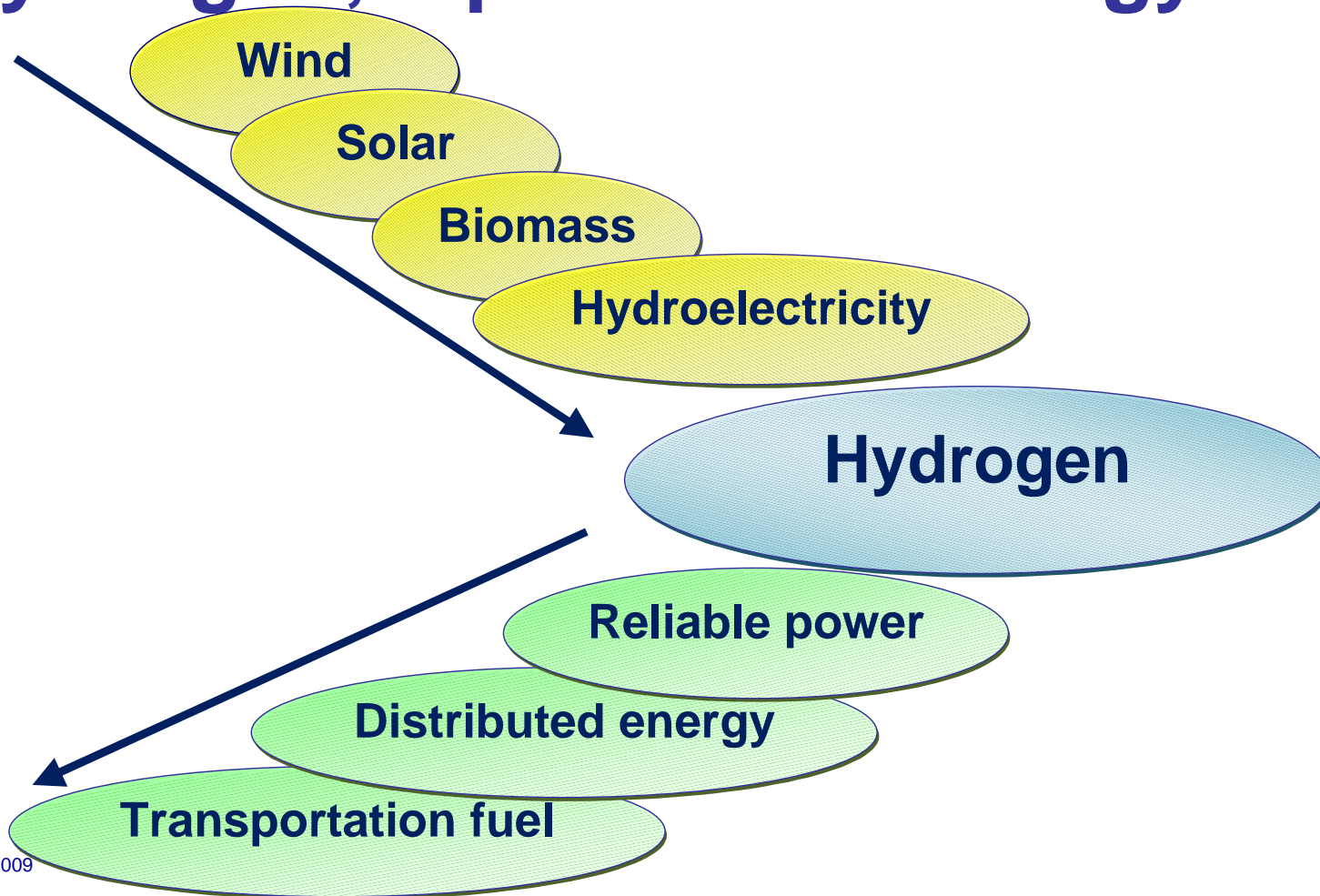
# CCS – Introduction

## Leadership in RCS activities

- Chair - ISO/TC 197 Hydrogen technologies
- ISO Representative - United Nations, WP.29 and SCETDG
- Vice-Chair of Canadian mirror committee - IEC/TC 105 Fuel Cell technologies
- Chair – CHIC Hydrogen Installation Code



# Hydrogen, a part of the energy mix

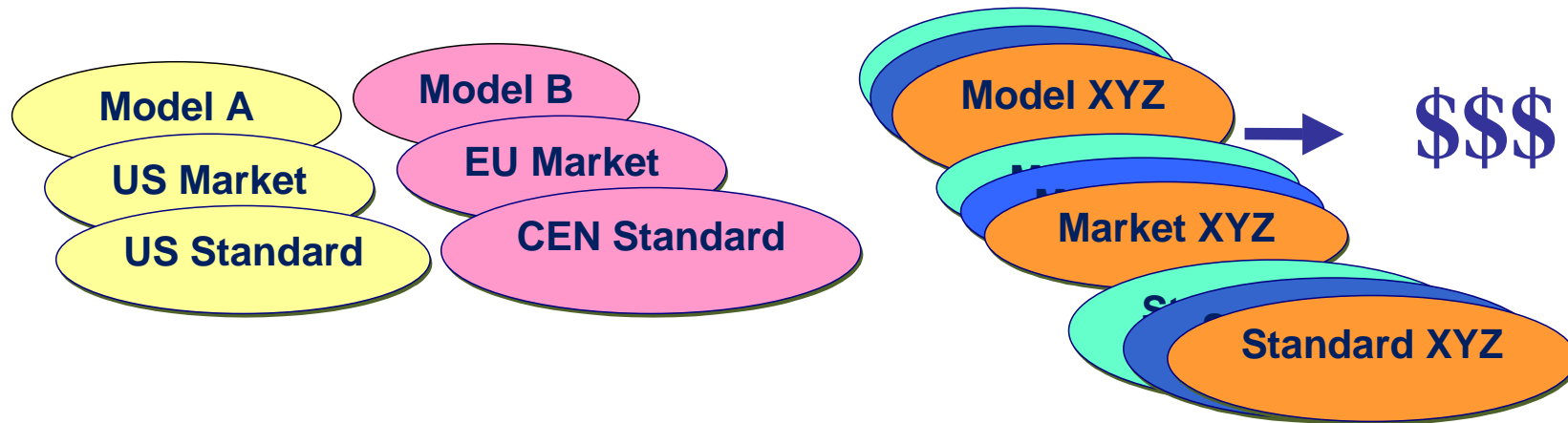


# Hydrogen, a part of energy mix

## Early markets for H&FC technologies

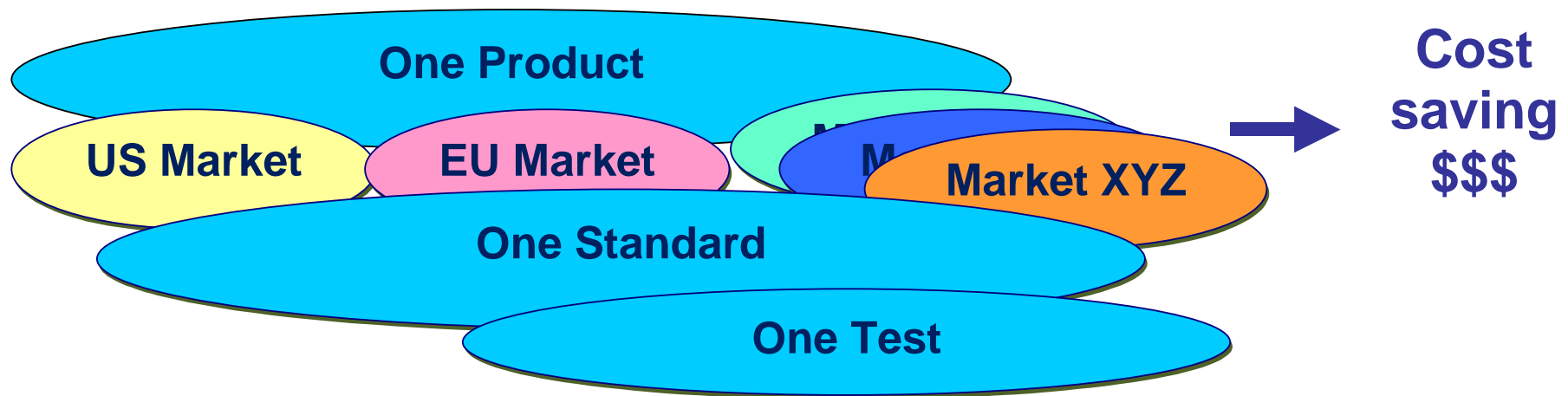
- Portable
  - mobile phones, notebook computers
- Stationary
  - backup power (UPS); Electric Grid Load balancing
- Specialty vehicles
  - forklifts

## Existing technologies



- Market fragmentation due to a multitude of standards
- Prevents economies of scale in manufacturing and distribution

## New technologies



- Has the potential to remove TBT
- Instruments are in place to have “One product, one standard, one test”

## Instruments are in place to have “One product, one standard, one test”

WORLD TRADE  
ORGANIZATION



**WTO/TBT**

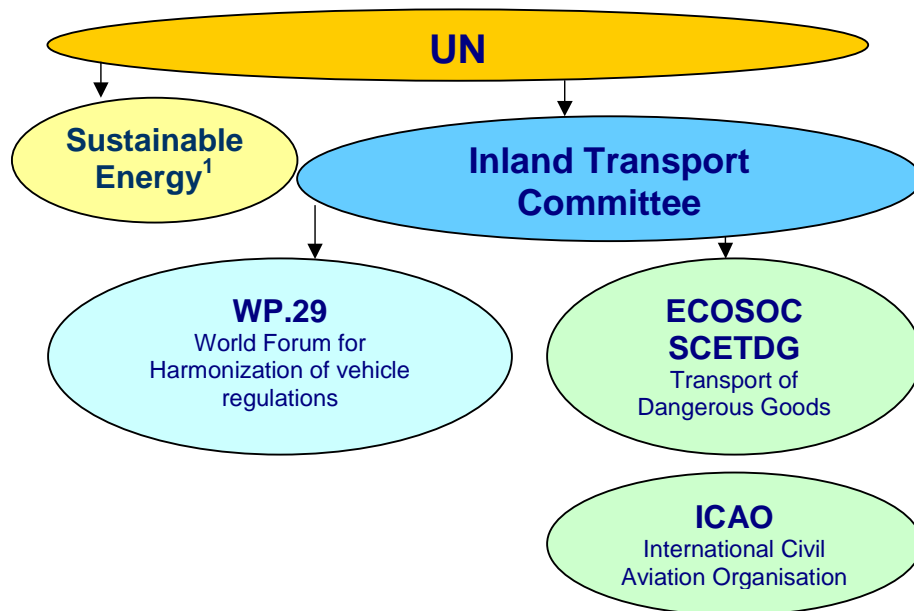
(149 members)

- The WTO recognizes the importance of the «One Product, One Standard, one Test» concept to remove TBT
- The WTO has established a strategic partnership with ISO and IEC, the International Standards Development Organizations



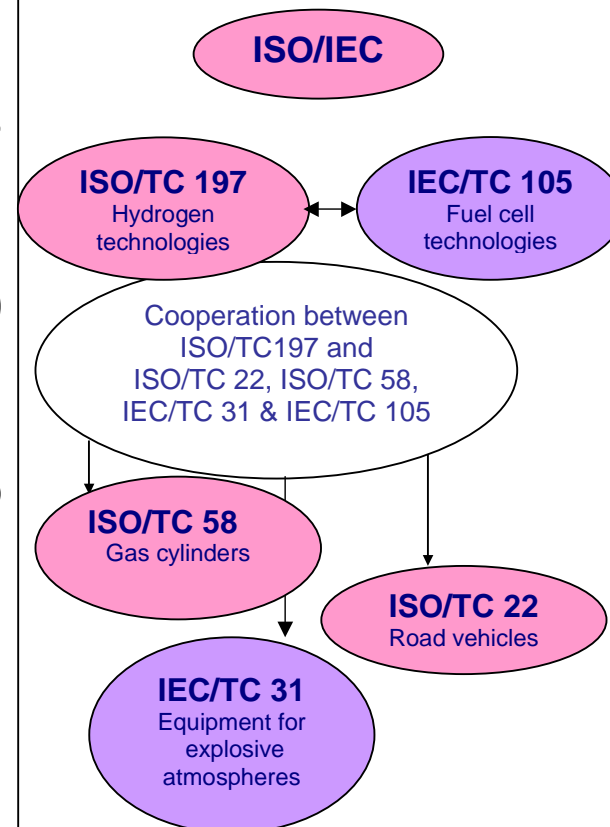
## Instruments are in place to have “One product, one standard, one test” in the field of hydrogen technologies

### International regulatory bodies



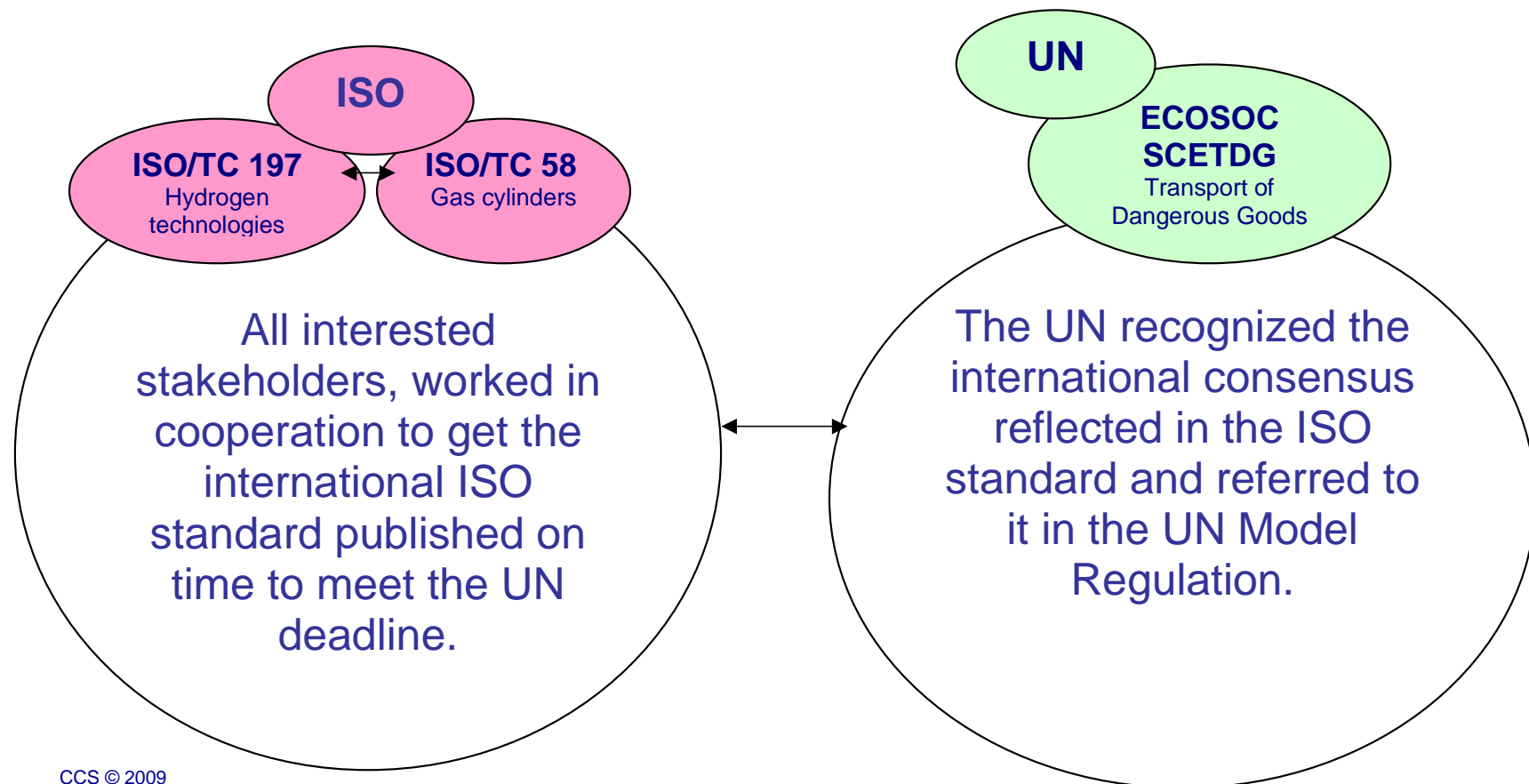
<sup>1</sup> The Sustainable Energy Division does not develop regulations.

### International SDOs



## Successful cooperation

### ISO 16111 Metal hydride assemblies for the storage of hydrogen



## **Successful cooperation**

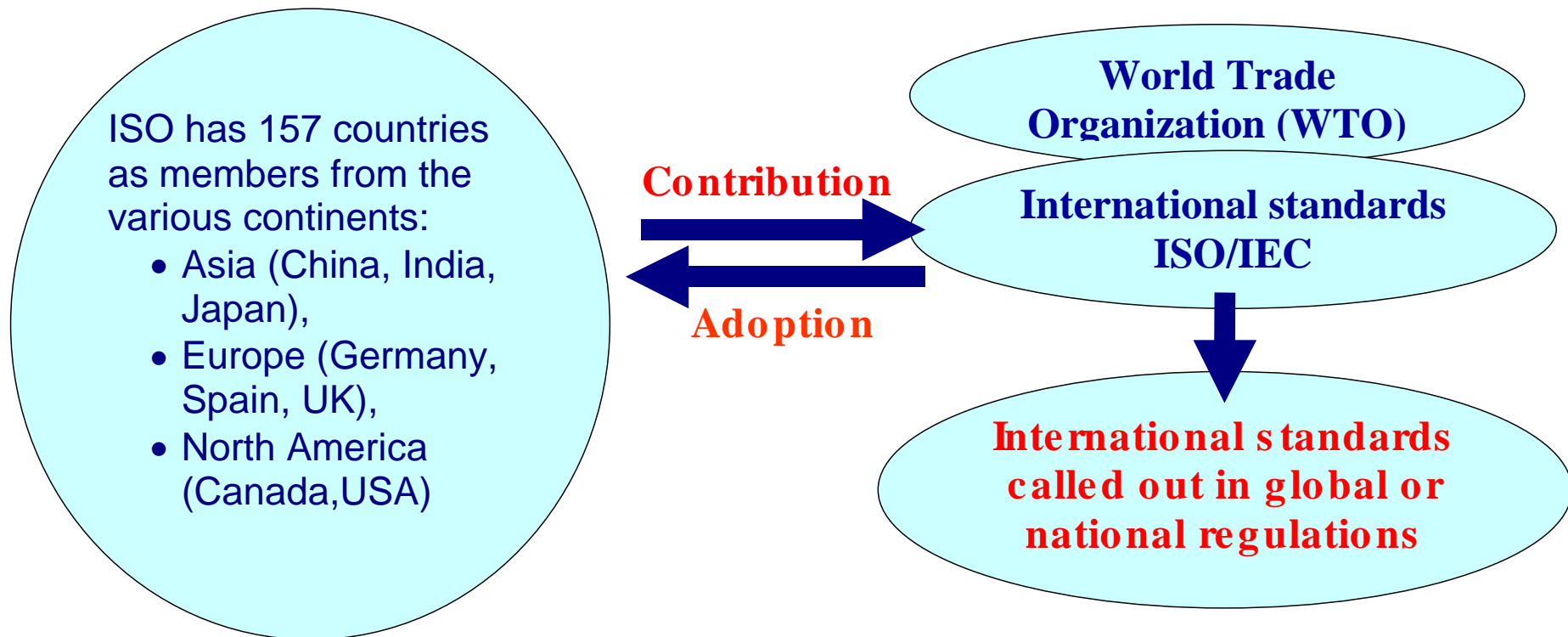
### **ISO 16111 Metal hydride assemblies for the storage of hydrogen**

- Industry used to need special permits on case-by-case basis
- The provisions of the UN Model Regulations will allow routine shipment of hydrogen storage assemblies certified to ISO 16111
- The close cooperation of ISO and the UN supplemented by industry support could be considered as a model.

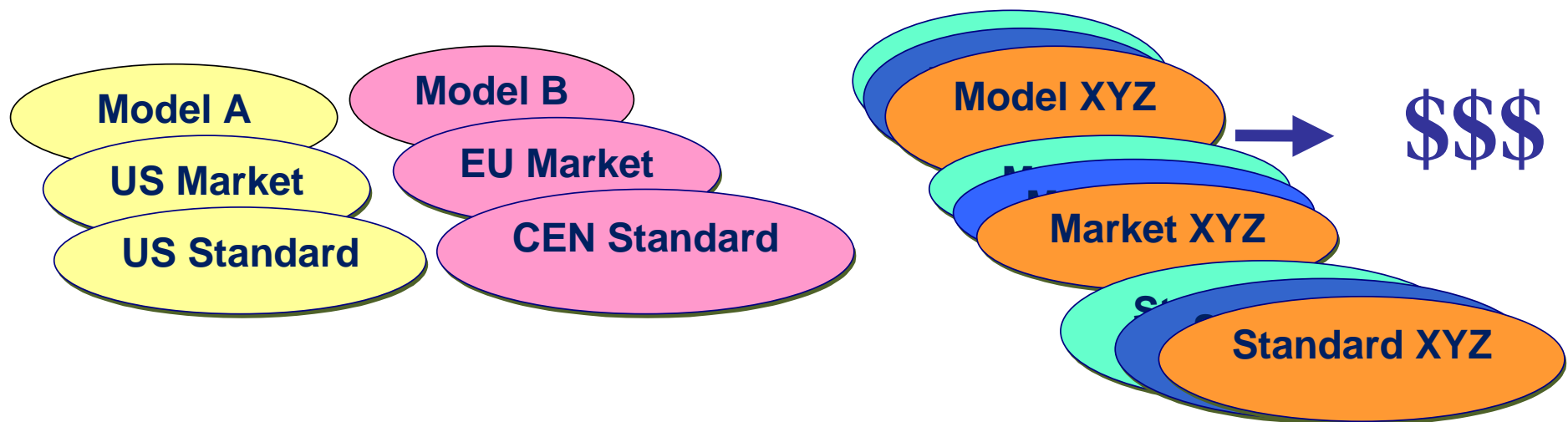
## Discussion of the challenge:

- Efforts have to be made to get «**One Product, One Standard, One Test**» to facilitate the deployment of hydrogen and fuel cell technologies on an international basis

## How to get «One Product, One Standard, One Test»



## We need to avoid fragmentation!



## Discussion of Challenges:

Challenge: We need to bring the leadership of industry and government together in an effort to safely lead the hydrogen community to commercialization through internationally harmonized regulations, codes and standards.

## Thank you

- For more information, please contact Randy Dey at [rdey@ccsglobalgroup.com](mailto:rdey@ccsglobalgroup.com)