

The Advanced Electrolyzer System ('AES')

Technology

- AES-100 produces green H2 from waste/dilute syngas streams, leading to higher profitability and greater sustainability

Market Opportunity

US\$2.5T

*Hydrogen Council 2050 H2
market size estimate*

~20%

*H2 volume growth potential from
AES*

US\$10B

*Illustrative syngas market growth
from AES*

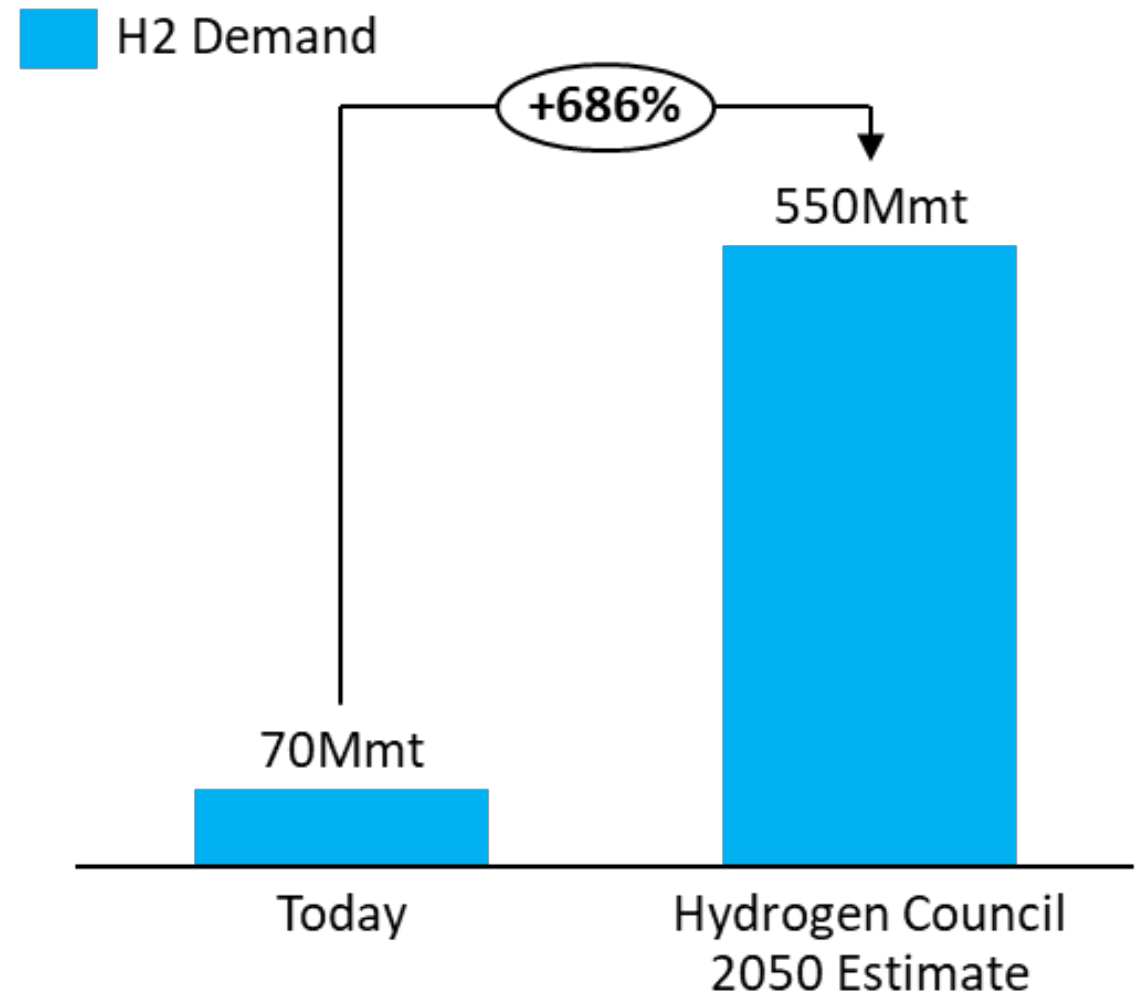
Development

- Aberdeen and T2M are focused on the development of AES and are seeking high-quality industrial partners to accelerate commercialization



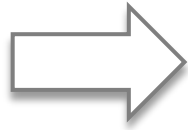
Hydrogen: Enabling the Transition to a Net-Zero Economy

- Conventional hydrogen purification technologies are uneconomical with dilute hydrogen streams
- AES-100 offers highly selective hydrogen separation using advanced electrochemical membranes and nano-materials
- Result is superior performance at a lower cost with zero incremental emissions in a safe design
- Modular design enables incremental scalability





Electric Power



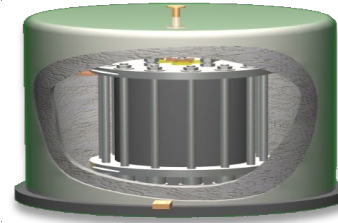
- ✓ *Fossil-fuel power*
- ✓ *Nuclear*
- ✓ *Wind, solar*
- ✓ *Hydro*

Syngas Stream Feedstock



- ✓ *Coal gas, naphtha*
- ✓ *Flare gas*
- ✓ *Liquid fuels*
- ✓ *SNG refinery*
- ✓ *Biomass gasifier*
- ✓ *SMR H2/NH3 plants*

AES Unit



- ✓ *Metal refining*
- ✓ *Heating*
- ✓ *Power generation*
- ✓ *Power storage*

Pure Hydrogen Output Sold to End Markets

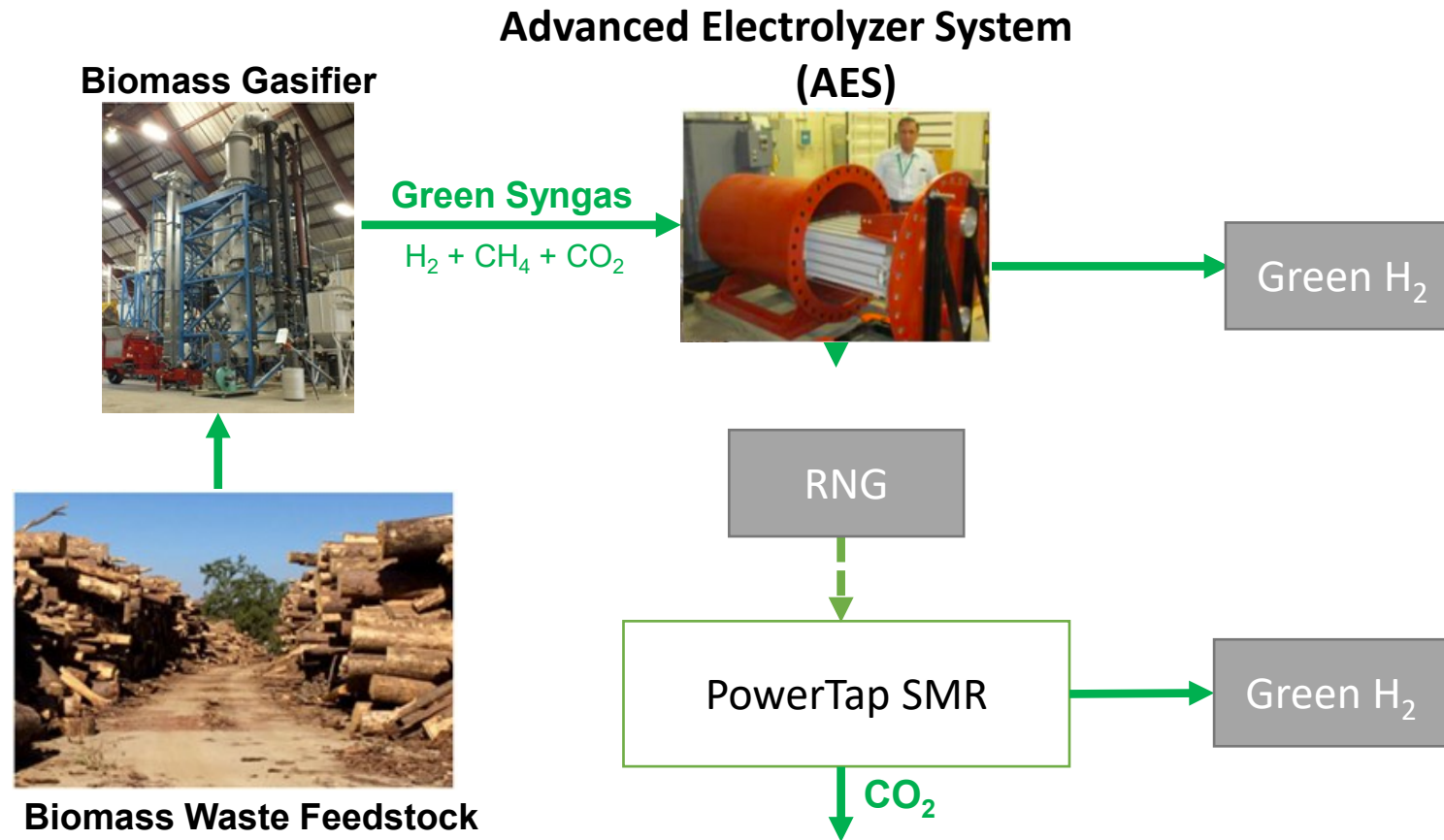


- ✓ *Hydrogen vehicles*
- ✓ *Synthetic fuels*
- ✓ *Upgrading oil/biomass*
- ✓ *Ammonia*

Modular, 'stackable' AES units integrate with SMR, hydrocracking or biomass plants to maximize hydrogen production



Co-production of Green H₂ and RNG



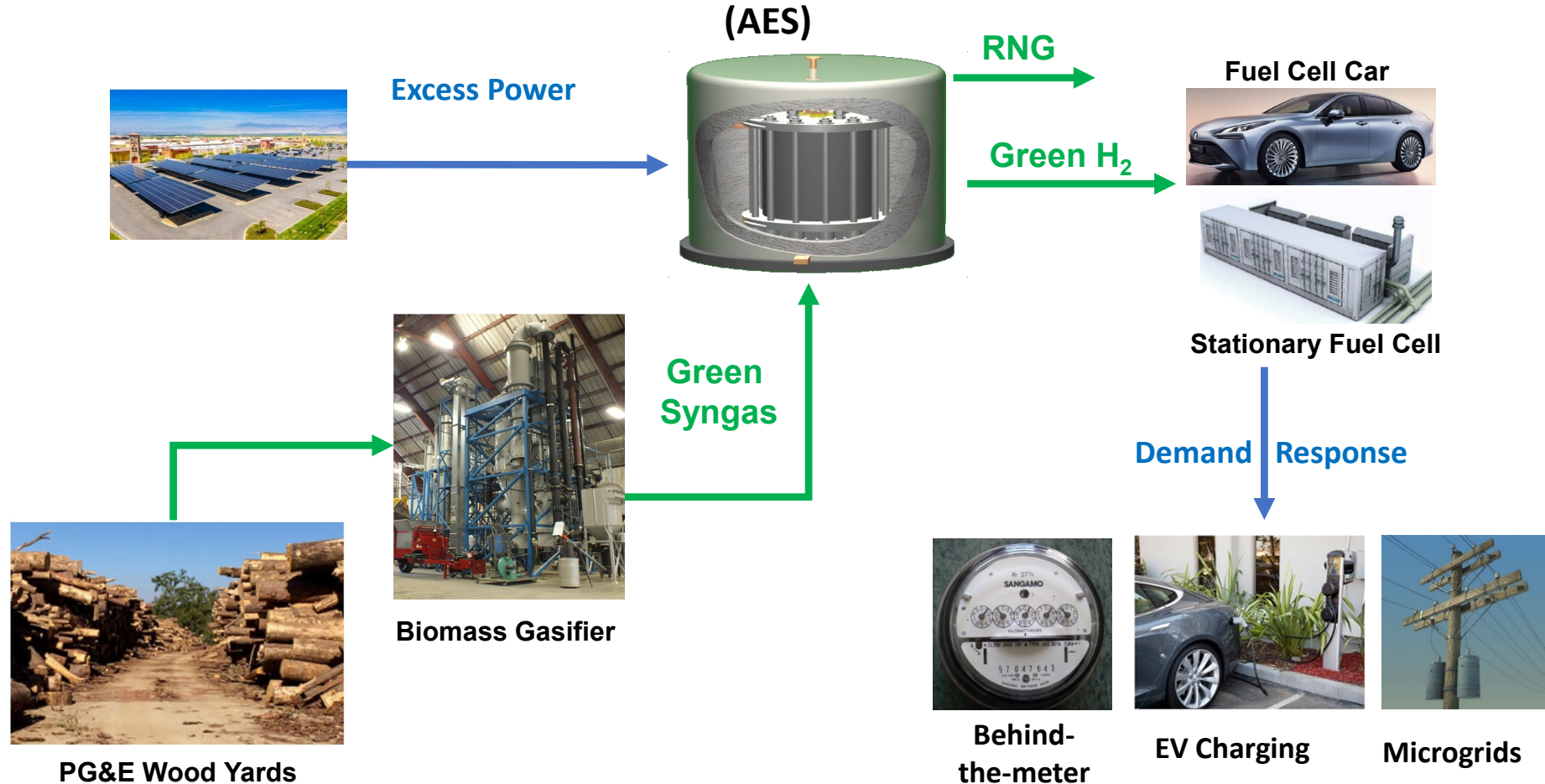
Advanced SMR with AES Enhances the Value Proposition:

Potential to double the H₂ Production – T2M Global IP



Biomass Hydrogen for Energy Storage

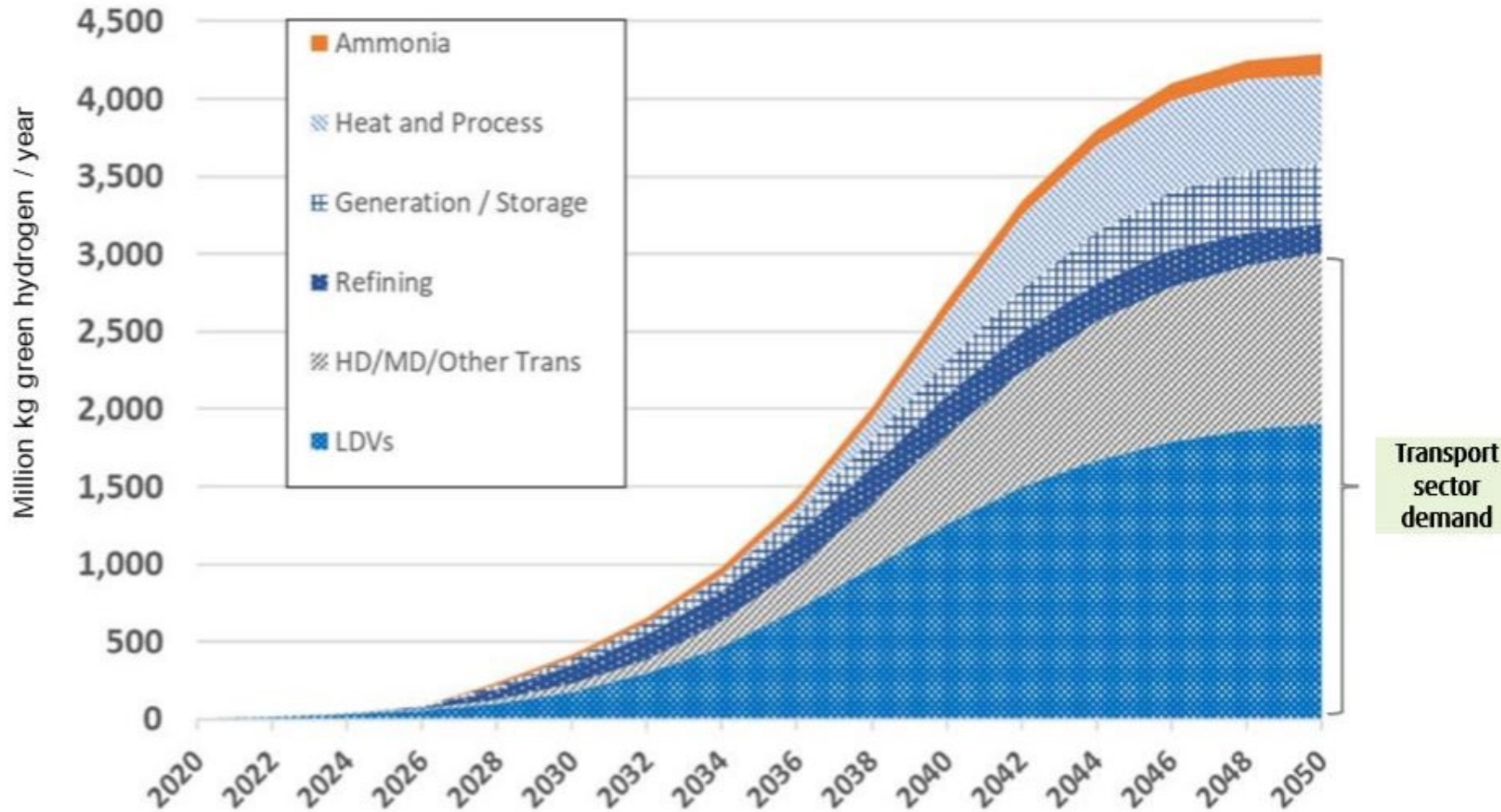
Advanced Electrolyzer System (AES)



New Source of Revenue for PG&E: Green H₂ and RNG



Future Focus: Transport Driving Demand Growth¹



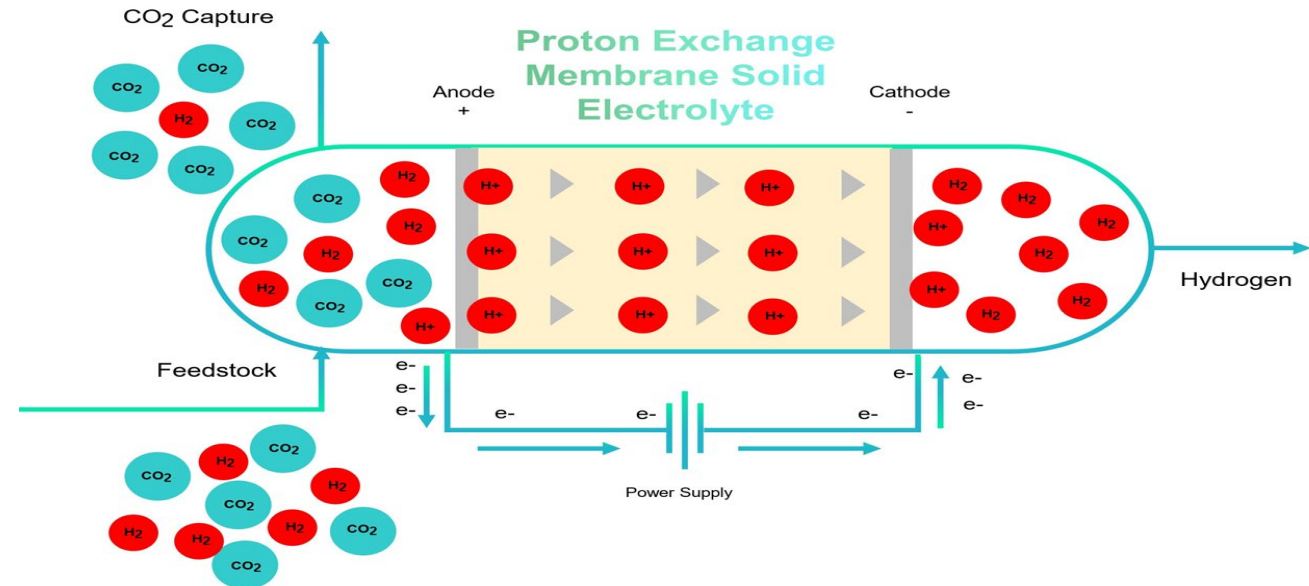
~67%
Transport sector share of green hydrogen demand

Transport sector demand



AES: Low-Cost, High-Purity Hydrogen Recovery

- To meet the demands of a rapidly growing transportation market will require more, high-purity, low-cost hydrogen
- Lower-cost Hydrogen at the fueling pump is critical to drive mass adoption in transport applications and beyond
- Conventional hydrogen purification technologies are uneconomical with dilute hydrogen streams



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- Result is superior performance at a lower cost with zero incremental emissions in a safe design
- Modular design enables incremental scalability



Technical Team: Driving AES Commercialization



Pinakin Patel

President



Dr. Ludwig Lipp

Vice President



Dr. Larry Christner

Senior Mentor

- T2M's world-renowned experts in hydrogen industry with over 300 years of relevant experience Includes technology development, scaleup, design for manufacturing and commercialization.
- Expertise include market-responsive product development, cost reduction and service agreements
- Extensive industry network, including Air Products, Exxon, Shell, Toyota and US government