Creating an Enabling Policy Environment

Thaddeus Burns
Sr. Counsel, IP & Trade, GE
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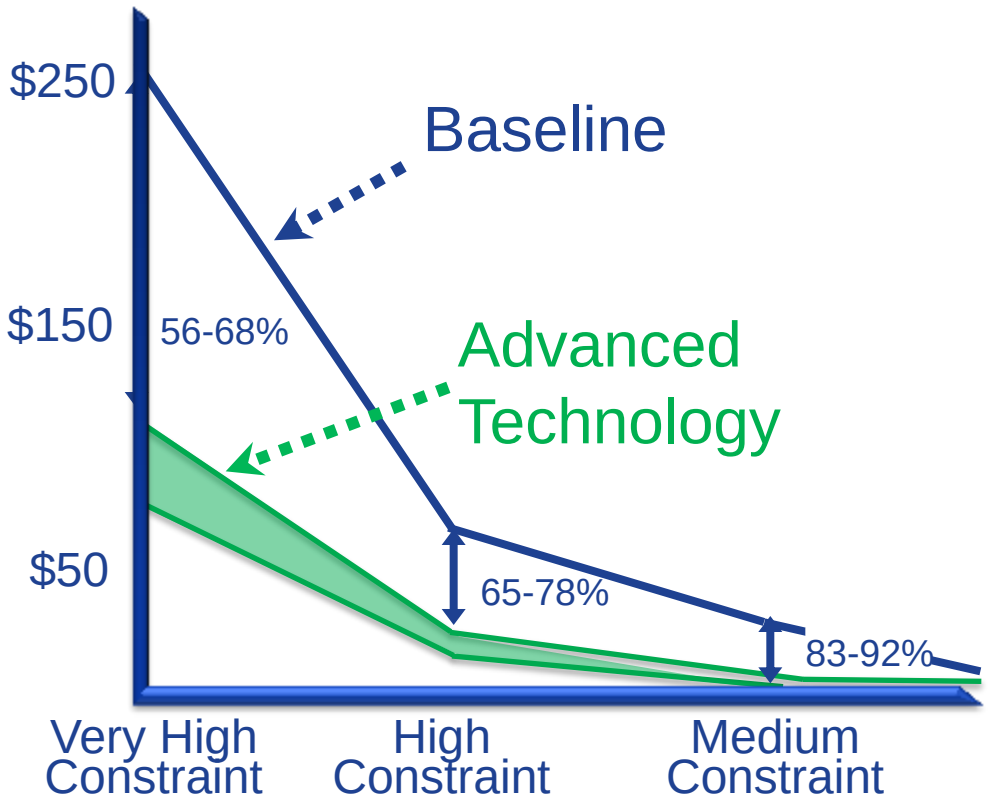
Technology is the ONLY WAY to Afford Mitigation

100-YEAR CUMLATIVE GLOBAL MITIGATION
(Cost in Trillions of 2000 US$)



Source: PNNL-16078. Climate Change Mitigation: An Analysis of Advanced Technology Scenarios

The Price Tag:
$200B Annually
For 20 years

Source: Secretariat UNFCCC

R&D spending is less than ½ that amount

The private sector funds over 2/3 of clean energy R&D

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MOTIVATING Green Technology Investment

How do you

FACILITATE

private sector to investment??

Understand the private sector's

MOTIVATION

for investment

THE RIGHT POLICIES TO DRIVE FOC

Government	→	Long Range R&D Investment
Academia	→	Prizes
Private Sector	→	Absolute return & predictability

MOTIVATING THE PRIVATE

- Patent protection is a necessary pre-requisite for investment
- Tariff reduction accelerates adoption & technology diffusion

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Liberalizing green trade to increase access

SIGNIFICANT TARIFF BARRIETS ON GREEN TECH

Among WTO countries

~60% impose tariffs on wind, with a mean tariff of 7.4%

~43% impose tariffs on solar, with a mean tariff of 8.8%

OTHER FACTORS INHIBITING ACCESS

- Local content restrictions & procurement requirements
- Compulsory licensing of patents
- Product based standards

Tools to *enhance access* to green technology

- Reduce costs of goods & services, e.g. eliminating tariffs
- Increase fair competition by removing local content & procurement restrictions
- Provide a predictable investment regime, e.g. through robust IPR
- Harmonize technology based standards

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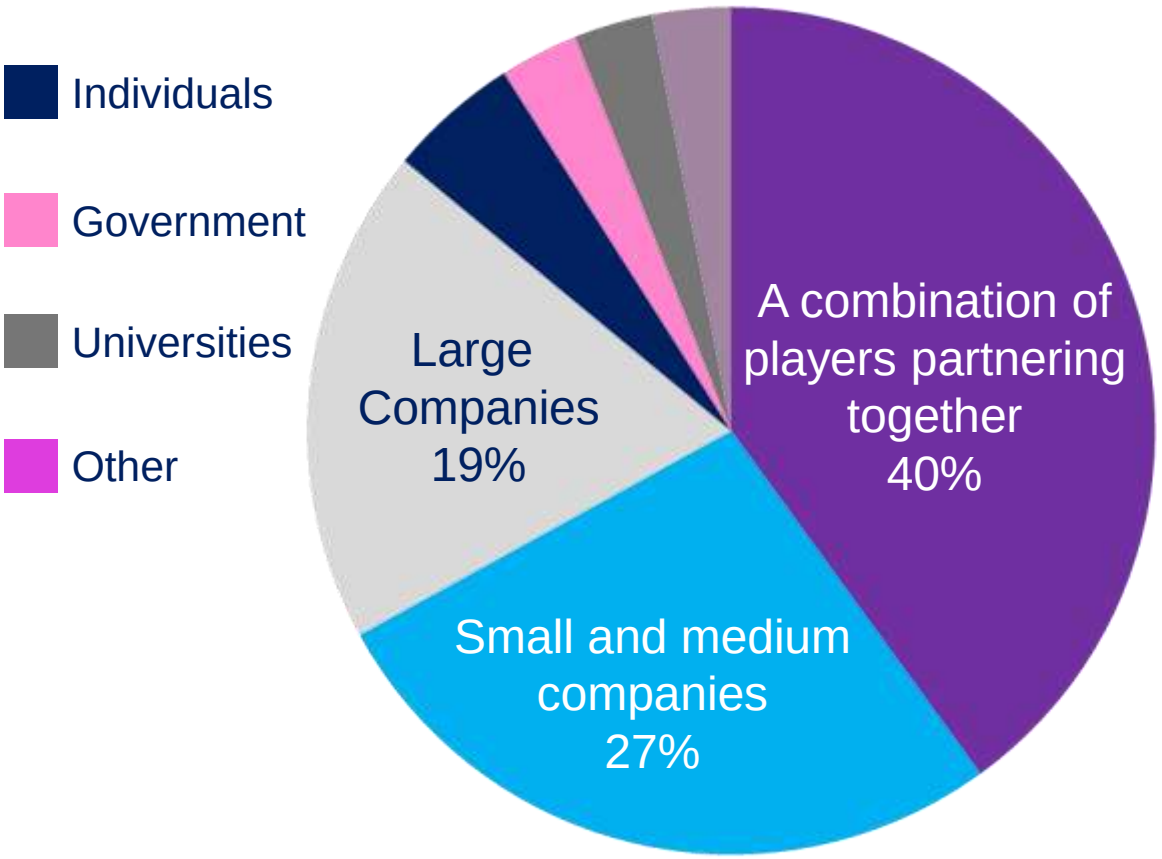
Today's innovation requires partnership



86% of those surveyed believe partnerships will drive more success, than individual institutions.

By putting our COLLECTIVE imagination to work for a better future

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ecomagination's $200MM challenge

emerald Technology Ventures

Foundation CAPITAL

KPCB

ROCKPORT CAPITAL

CARBON TRUST

CREATE

CONNECT

USE

70,000 people

150 countries

Generating nearly **4,000** ideas

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When it comes to addressing climate change

WE HAVE TO THINK LOCAL

Solar technology requires access to sunlight

Wind power only works where the wind blows

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Partnering with Petrobras in Brazil
to build the first sugarcane-based ethanol power plant

THE CHALLENGE FROM PETROBRAS

Brazil's national energy company wanted to diversify its energy sources, while allowing greater flexibility in power plants and building a foundation for future technology and innovation.

IN ONE YEAR

25M liters
of water saved

50%
reduction of particulate matter emissions

150M
metric-ton reduction of aldehyde emissions during the trial period

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Tapping into the Best Talent Across the Globe

Global Research Center
Niskayuna, NY

India Technology Center
Bangalore, India

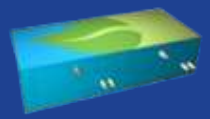
China Technology Center
Shanghai, China

Global Research Europe
Munich, Germany

Brazil Technology Center
Rio de Janeiro, Brazil
COMING SOON

With a $10B investment

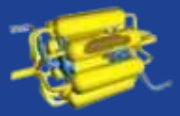
Batteries



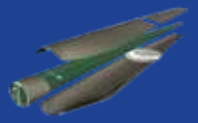
Lighting

Supersonic Heat Release

CO2 Capture



Advanced Wind Blades



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Partnership enables faster technology diffusion

- Capitalizing on each party's expertise provides a faster path to viable solutions
- Sharing perspectives often creates each better results
- Best done in an environment where information can be widely shared

Examples of Expertise

- Local environment
- Access to distribution channels
- Access to local talent and resources
- Technical skills

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A few examples of technology diffusion

PRODUCT SALES	• Import of the technology itself • Gain understanding through operating machines
SERVICE OF EQUIPMENT	• Learn how to operate and repair equipment • Receive technology diagrams, installation manuals, and other training
PARTNERING	• Access to complementary skills or resources • Obtain manufacturing know-how (e.g. suppliers)
LICENSING OR SALE OF PATENTS	• Right to use specific technology

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Helps find new partners

Clear contribution to partnership

Reviewing patent literature can uncover parties having complementary solutions or synergies

Identifies what each party brings to the venture and what is new

IP drives & supports partnerships

Predictable IPR encourages sharing

Provides a construct to build on success

Avoids holdbacks which can slow down dissemination and prevent follow-on innovation

New inventions can be patented to be exported, licensed, etc.

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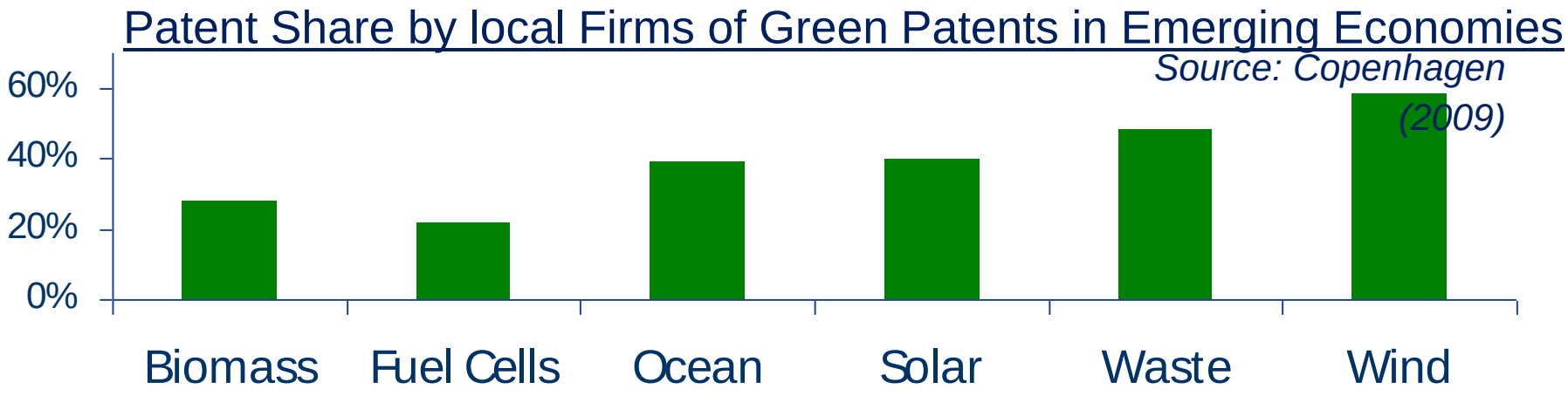
Emerging economies are building patent estates



- 2/3 Clean tech patents are concentrated in three countries
  - Japan, Germany , and US
- China, South Korea, & Russia have 15% of climate patents
- Emerging economies own a significant % of patents within their markets