

# Industrial Energy Efficiency: What Role for Policy?

**Energy Efficiency Accelerator Workshop**

October 1, 2015

*Yerevan, Armenia*

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# Presentation Outline

## 1. About IIP

- *Policy research: the policy pyramid*

## 2. Drivers and barriers to industrial energy efficiency (IEE)

## 3. Global IEE Policies: Key Findings

## 4. Closing Thoughts

# IIP at a glance

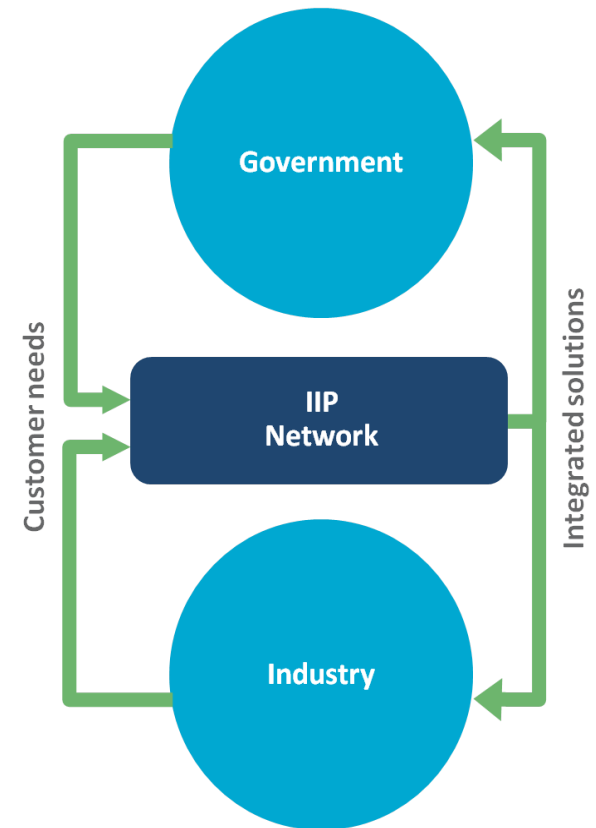
## MISSION

Improve EE in industry, enhance productivity, and reduce GHG emissions by providing the private sector and the Government agencies access to best practice information, technologies, tools and financial solutions.

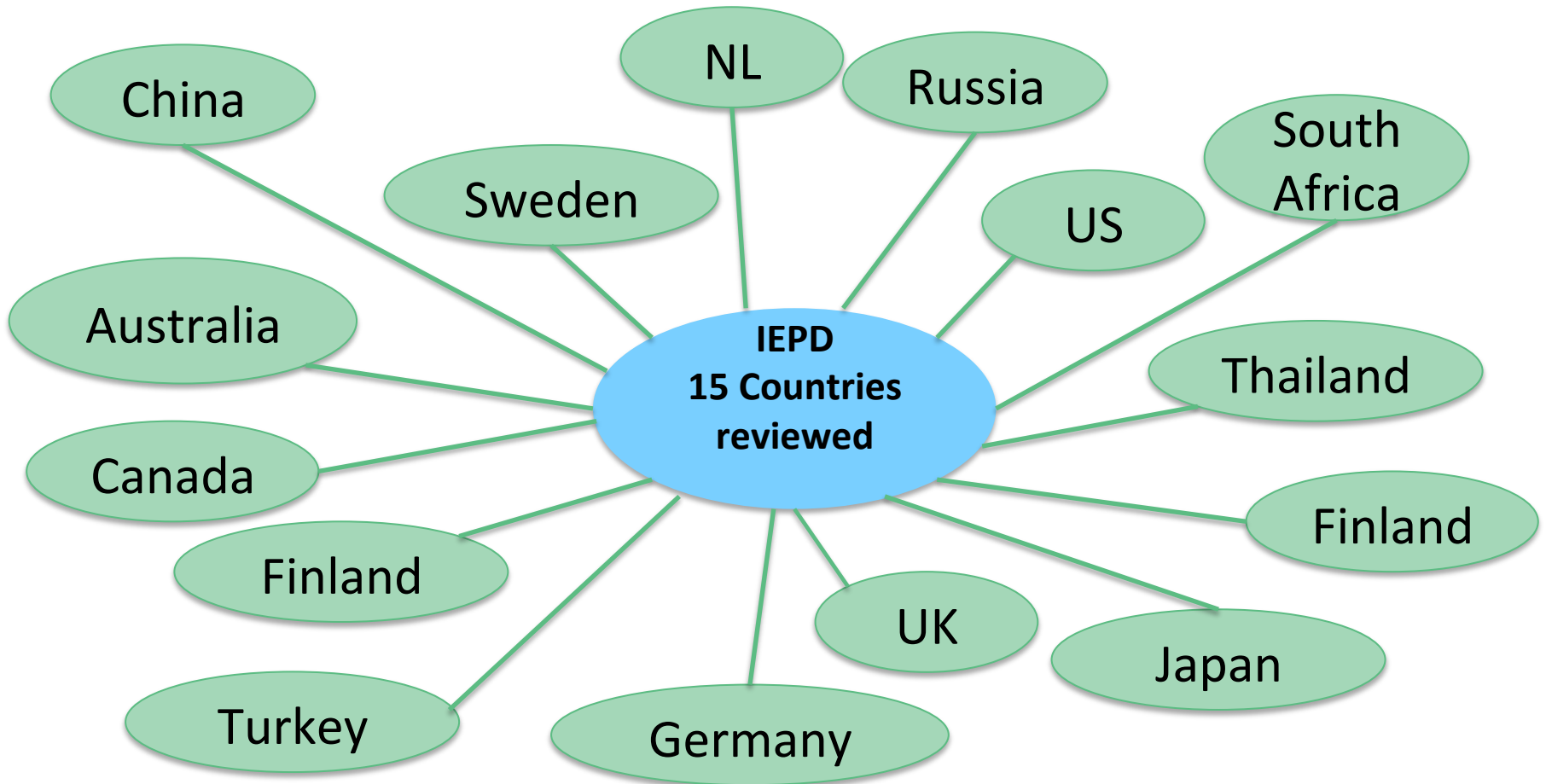
## WHAT WE DO

- Sharing best practices
- Policy assistance
- Financial expertise
- Technical support

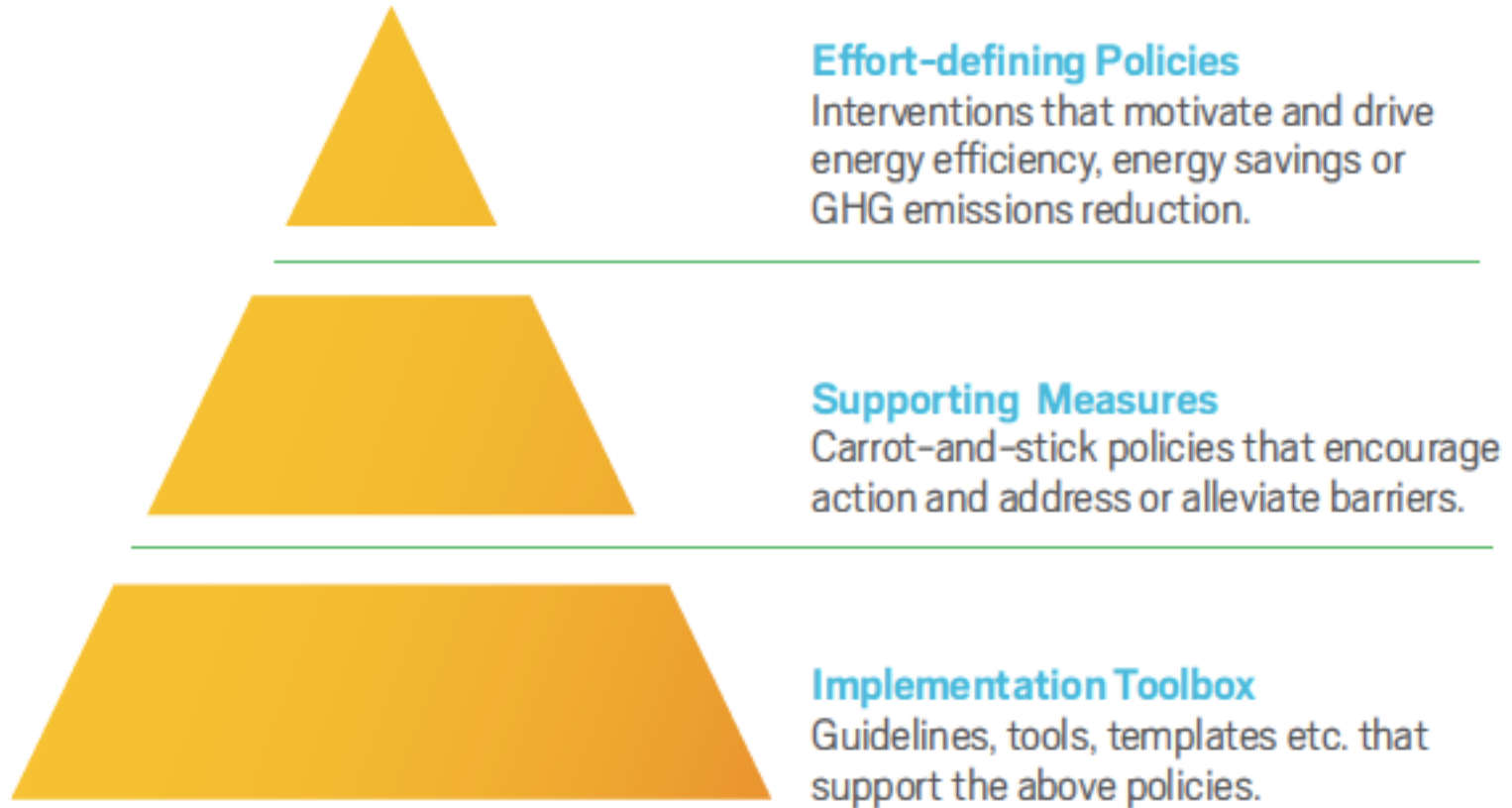
**WHO WE ARE:** NGO with offices in Beijing, New Delhi, and Washington, DC.



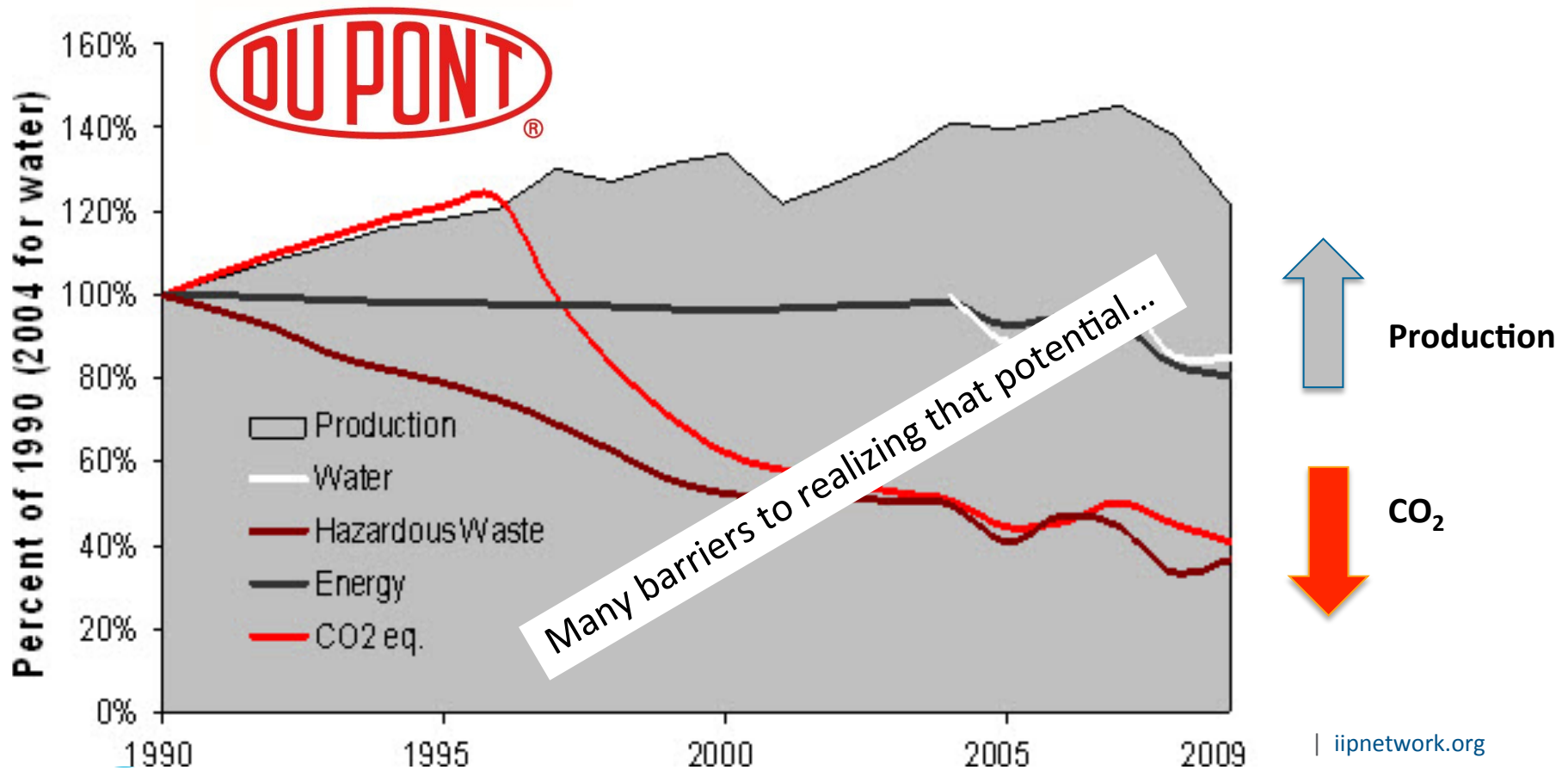
# IIP's Industrial Efficiency Policy Database (IEPD)



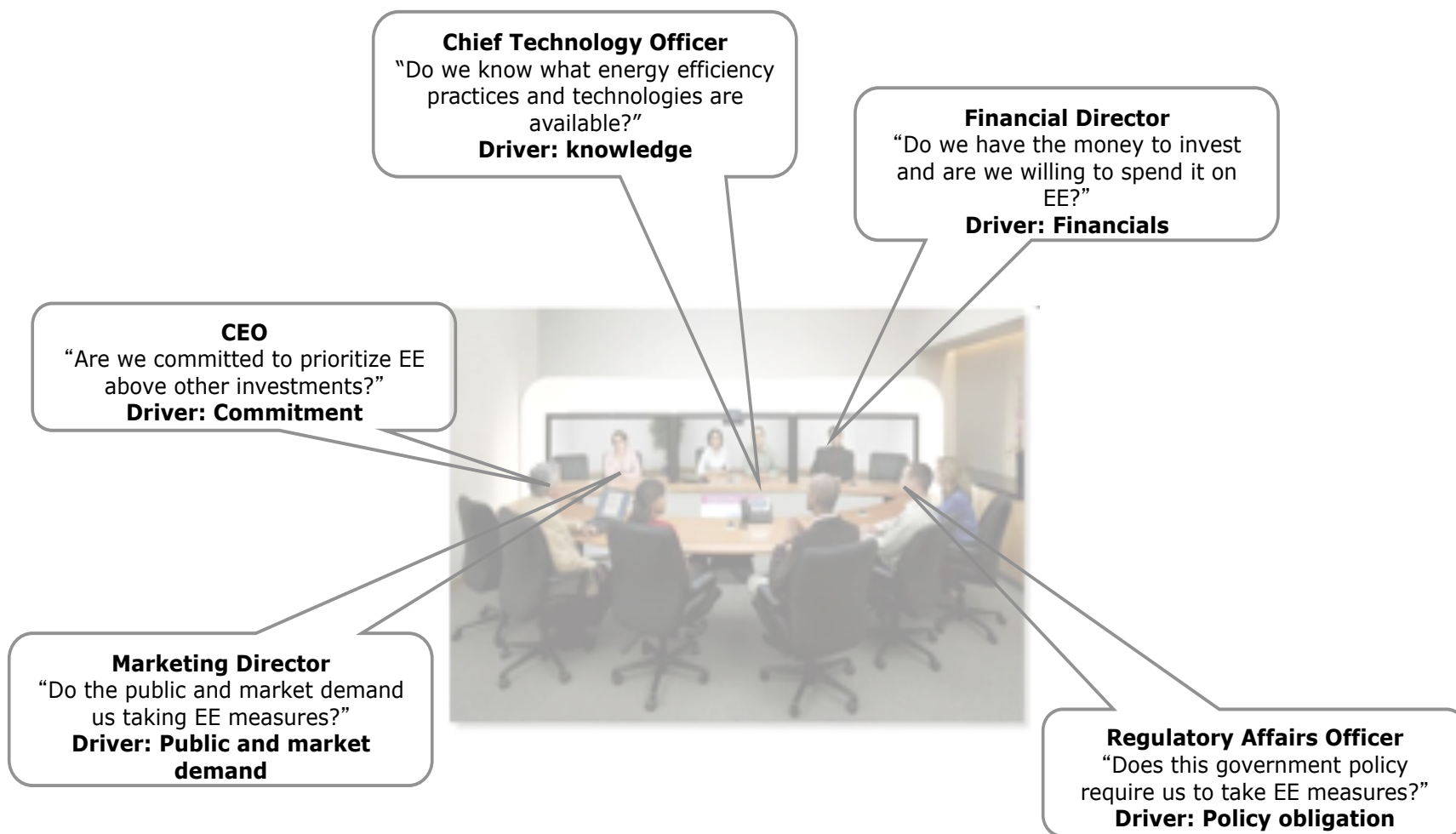
# IIP's Policy Pyramid



# Transforming Industry with EnMS – Gaining Productivity



# Drivers Stimulating Investment Decisions



Policies must stimulate the drivers of investment decisions

# Global IEE Policies: Key Findings



1. All countries have a policy package to deliver energy savings in industry
2. There is no “one size fits all” solution
3. ... but adoption of energy management by companies is key
4. Policies targeting the industry sector tend to be flexible to allow companies to remain competitive internationally
5. There is a growing market, led by government, for financial mechanisms dedicated to energy efficiency projects
6. Alternate and complementary channels are increasingly playing a role in delivering energy efficiency

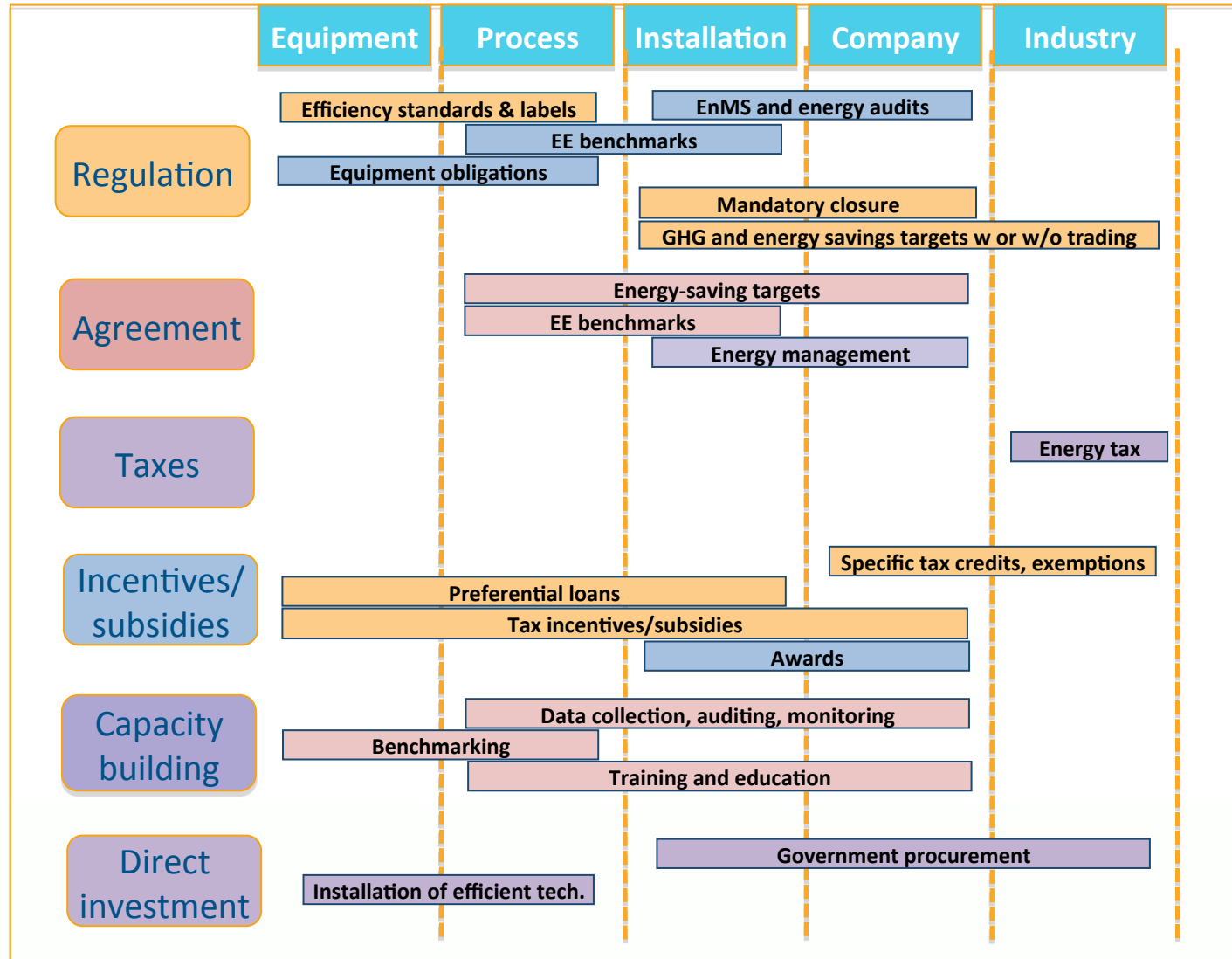


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# Countries introduce policy packages – not policies in isolation

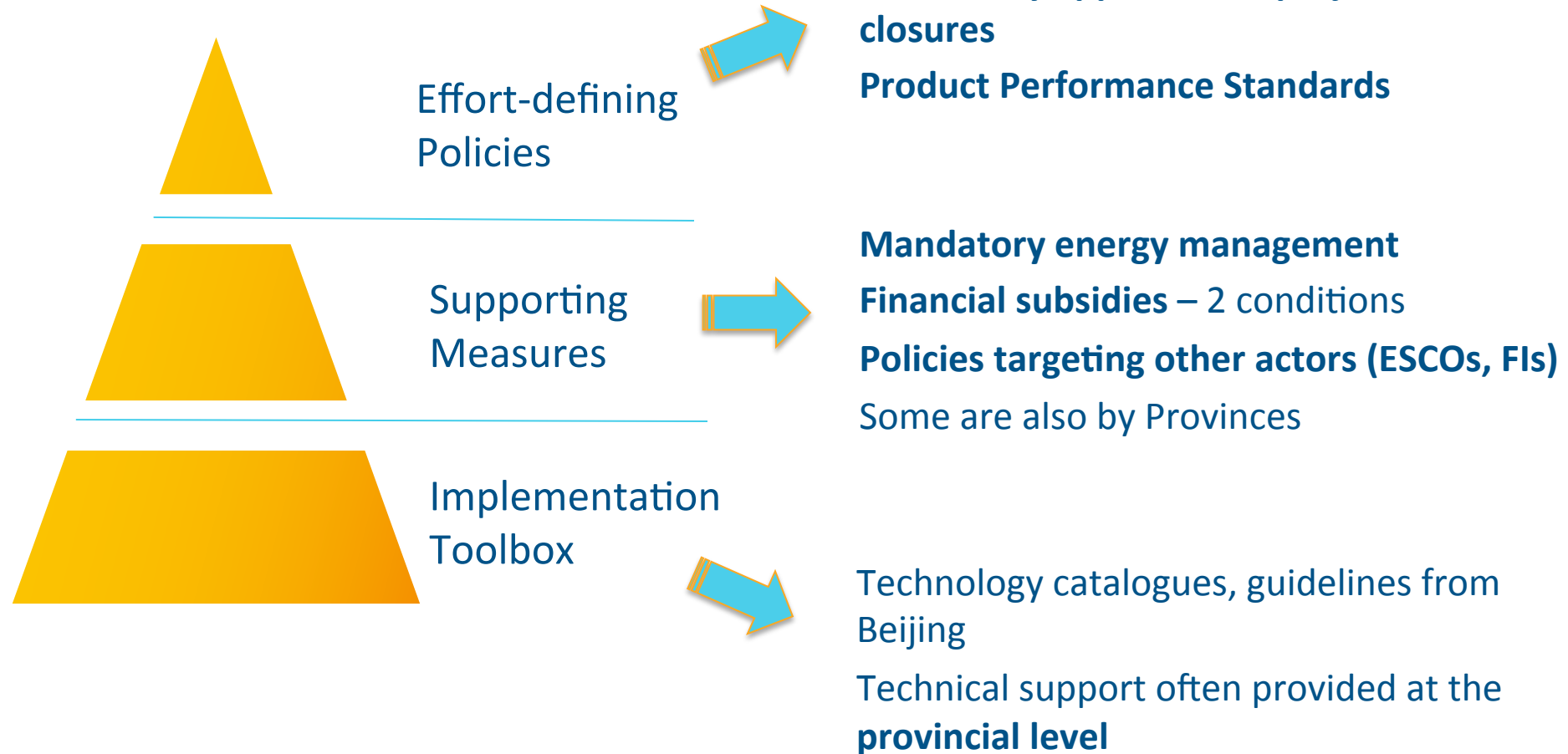


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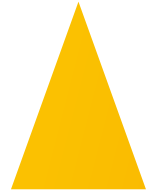
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## China: simplified

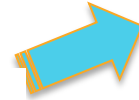


Moved away from technology push to performance standards, energy management and systems optimisation as well as green crediting policies

## United States (Federal): simplified



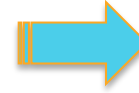
Effort-defining  
Policies



**Mandatory standards** on equipment  
**Voluntary programs**, including the Superior Energy Performance Program



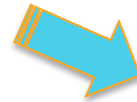
Supporting  
Measures



**Voluntary ISO 50001 and awards**  
**Many measures developed at the State level**, with some exceptions at the Federal level



Implementation  
Toolbox

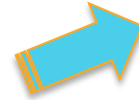


**Very detailed implementation toolbox** and tools to help companies identify their energy conservation potentials, ex. Software tools

# Denmark's Policy Pyramid



Effort-defining  
Policies

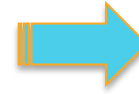


European **Emissions Trading Scheme**  
**Voluntary agreement with constraints**

- mandatory ISO 50001 certification,
- implementation of EE opportunities with payback <4y &
- penalty in case of non compliance



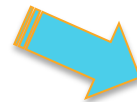
Supporting  
Measures



**Special investigations** and technical assistance  
**Utility obligation** with financing of IEE from utility bills



Implementation  
Toolbox



**In-depth technical assistance**  
Ex. "The Toolbox" (ex. Guidelines on EnMS, EnPIs); Information sharing and center for SMEs



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6. Alternate and complementary channels are increasingly playing a role in delivering energy efficiency

## Examples of Government Programmes that Promote Energy Management

Country	Program Name	EnMS type	Voluntary Mandatory	Certification	Drivers
Australia	Energy Efficiency Opportunities	EEO Assessment Framework	M	No	Public reporting of EE opportunities
China	Top 10,000 Enterprise Program	GB 23331	M	Voluntary	Mandatory
Denmark	Agreement on Industrial Energy Efficiency (DAIEE)	ISO 50001	V	Yes	Tax rebate Mandatory investments <4y payback
Ireland	Energy Agreements Program	ISO 50001	V	Yes	Extensive technical support
South Korea	GHG and Energy Target Management scheme	ISO 50001	M	Yes	Mandatory
Sweden	Energy Efficiency in Energy Intensive Industries (PFE)	ISO 50001	V	Yes	Tax rebate
USA	Superior Energy Performance	ISO 50001	V	Voluntary	Awards, possible tax rebate





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# Policies Targeting Industry

## Flexible policy types:

- Voluntary agreements with companies and/or sectors (ex. GY, DK, IR, SW, US)
- Trading of energy savings or GHG emissions (ex. EU, IN)
- Maximum amount of energy per tonne of industrial product (ex. CH)
- Benchmarking targets (ex. JP)
- Rewards and incentives for overall improvement (ex. US, CH)
- Financial incentives and fiscal incentives

## Often come with ties...

- Adoption of energy management systems (certified or not)
- Minimum energy performance improvements
- Penalties for non-compliance

## Requirements and regulation are generally aimed towards

- EE identification (energy audits, EnMS)
- Specific equipment types (motors)
- Closure of inefficient plants (ex. CH)

**Policies targeting SMEs** tend to also be adapted to companies' capacity to dedicate resources to EE.



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# Financial Mechanisms for Industrial EE

- Direct grants
  - (e.g. grants to support energy audits and the technical development of EE projects)
- Subsidies and rebates
  - (e.g. direct subsidies for energy efficiency equipment)
- Tax incentives such as credits, exemptions or improved depreciation conditions
- Reduced or low-interest rate loans
- Loan guarantee schemes or similar risk-sharing schemes
- **EBRD example:** integration of EE financing into its standard loan operations



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# Alternate Delivery Channels for Industrial Energy Efficiency

Delivery Models	Drivers for Players	Drivers for Companies
Supply Chains (large corporations)	<ul style="list-style-type: none"> <li>• Enhance company's reputation</li> <li>• EnMS can be used by all industrial players, large and small</li> <li>• Government support: allowing companies to meet their EE obligations by engaging their value chain</li> </ul>	<ul style="list-style-type: none"> <li>• Buying power of the large company</li> <li>• Cost savings</li> <li>• Possible implementation support</li> </ul>
Utilities/Energy Providers (utility or third parties)	<ul style="list-style-type: none"> <li>• Improve the utility's customer relations</li> <li>• Strategy to improve reliability and availability of power supply at a lower cost than supply resources</li> <li>• Regulatory requirements for energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable source of financing</li> <li>• Technical assistance</li> </ul>
Financial Institutions	<ul style="list-style-type: none"> <li>• Increase number of deals and project finance</li> <li>• Help assess the risks and returns of EE projects</li> <li>• Reduce investment risk</li> <li>• Improve and enhance customer relations</li> </ul>	<ul style="list-style-type: none"> <li>• Lower loan transaction costs</li> <li>• Blending technical assistance with financial products</li> </ul>
Industry associations	<ul style="list-style-type: none"> <li>• Provide valuable service to member companies</li> </ul>	<ul style="list-style-type: none"> <li>• Sharing of information</li> <li>• Implementation support</li> </ul>

## A Few Closing Thoughts...

- Government-industry consultation is key
- Effort-defining policies are the most important driver
- Awareness building
- Challenge and necessity to monitor and evaluate policies implemented in order to adapt to industry needs
- Importance of co-benefits

# Thank you! and Additional Resources

Meaghan.Phelan@iipnetwork.org; [www.iipnetwork.org](http://www.iipnetwork.org)

## Resources:

EnMS case studies of corporate adoption:

<http://ietd.iipnetwork.org/category/enms>

IEA-IIP Policy Pathway on Energy Management Programmes for Industry:

[http://www.iipnetwork.org/PolicyPathway\\_IEAIIP.pdf](http://www.iipnetwork.org/PolicyPathway_IEAIIP.pdf)

Large-scale adoption of EnMS: global EE programme insight:

[http://www.iipnetwork.org/EnMS\\_10pager\\_memo.pdf](http://www.iipnetwork.org/EnMS_10pager_memo.pdf)

Clean Energy Ministerial GSEP Energy Management Working Group resources for governments:

<http://www.cleanenergyministerial.org/Our-Work/Initiatives/Buildings-and-Industry/Energy-Management/EMWG-Overview> and resource page

<http://www.cleanenergyministerial.org/Our-Work/Initiatives/Buildings-and-Industry/Energy-Management/Publications>