

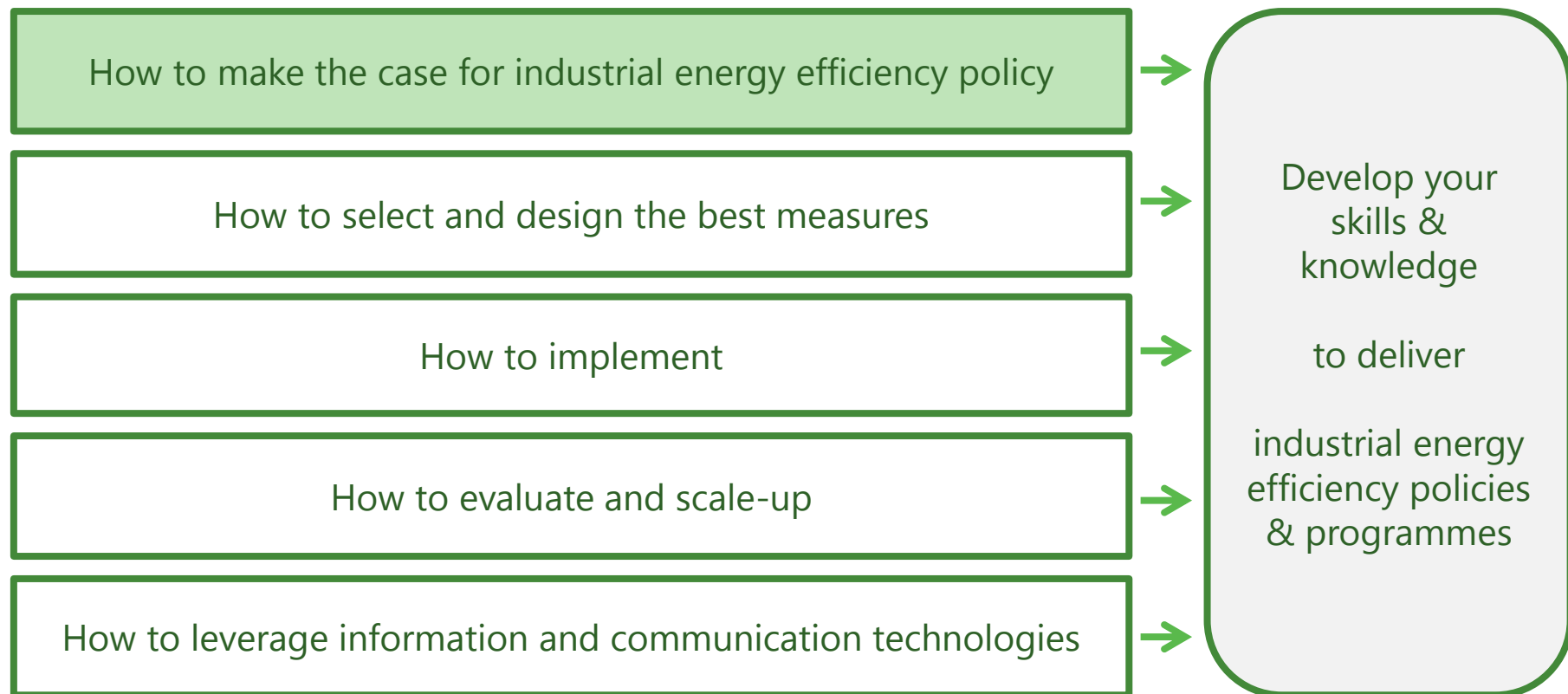


IEA Energy Efficiency In Emerging Economies Training Week

Industry Stream: Making the case for industrial energy efficiency policy

Vida Rozite & Patrick Crittenden, Paris, 15-17 May 2018

 #EnergyEfficientWorld



This session will focus on developing your capabilities to:

- Establish the barriers to energy efficiency in your country context
- Set meaningful programme objectives
- Identify other relevant policies and programmes that can complement your efforts

These are all important factors that help you to make a compelling case and rationale for an industrial energy efficiency policy or programme.

What is industrial energy efficiency policy?

- A set of strategies, legislation, measures, programmes that together stimulate energy efficiency improvement in the industrial sector.
- The industrial sector includes very large energy users ...



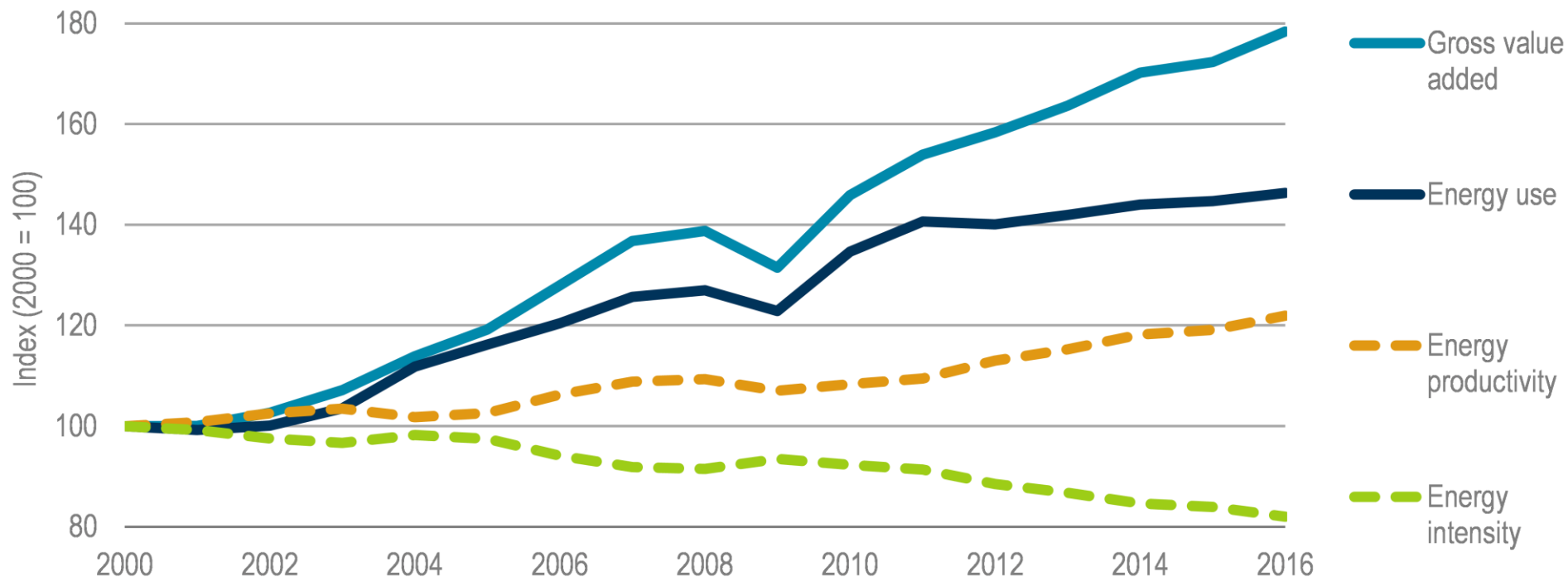
What is industrial energy efficiency policy?

- A set of strategies, legislation, measures, programmes that together stimulate energy efficiency improvement in the industrial sector.
- The industrial sector includes very large energy users ...
- And small and medium-sized enterprises in sectors that collectively consume significant energy.



- 24% of global CO₂ emissions
- Consumption has grown by about 1.3% annually since 2010 (industrial sector value-added has grown by 2.9%)
- Highest energy demand growth in 2010 to 2016 period occurred in India (4.7%), South Korea (2.7%), China (2.6%), and the Middle East (2.5%)
- Global industrial productivity (industrial value-added per unit of energy used) has increased by 1.6% annually from 2010 to 2016

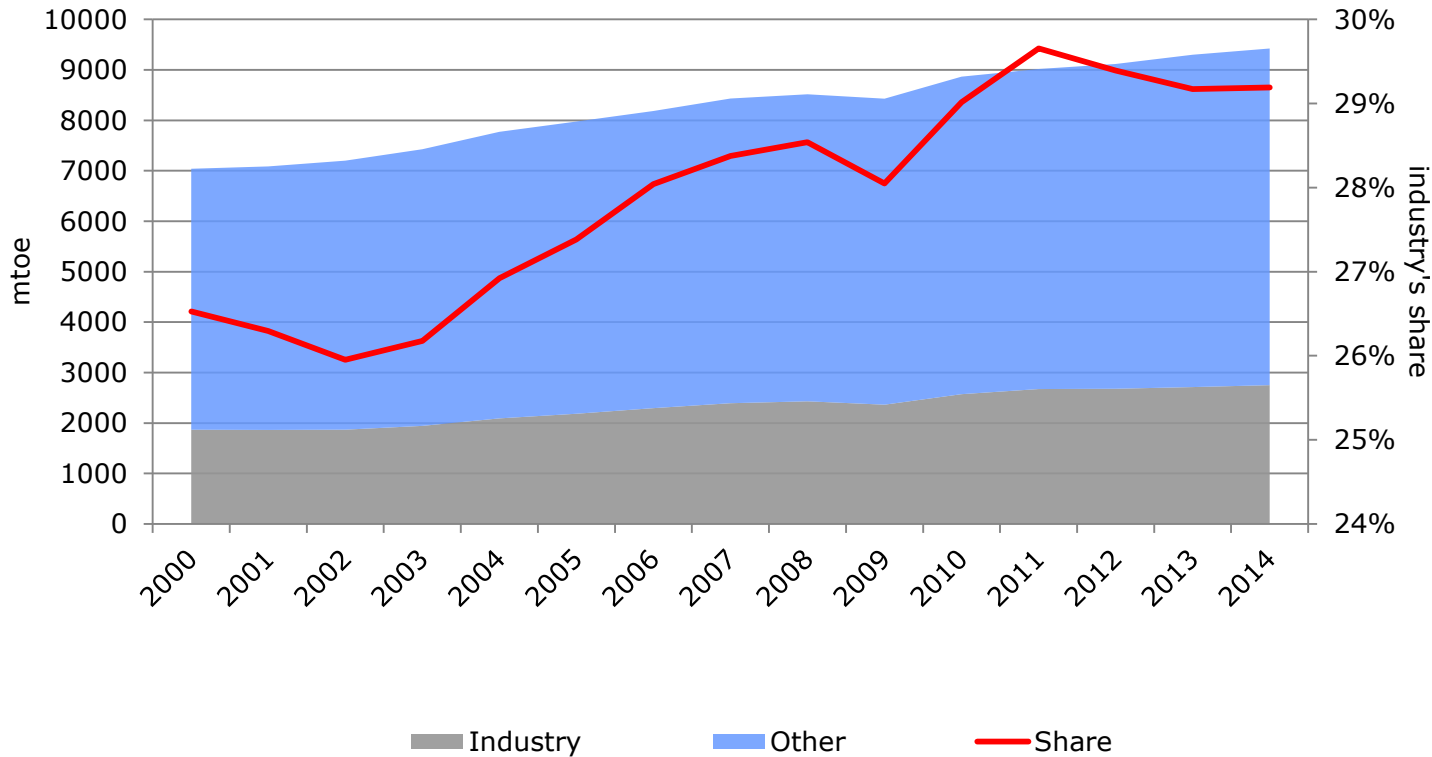
Industrial energy demand trends

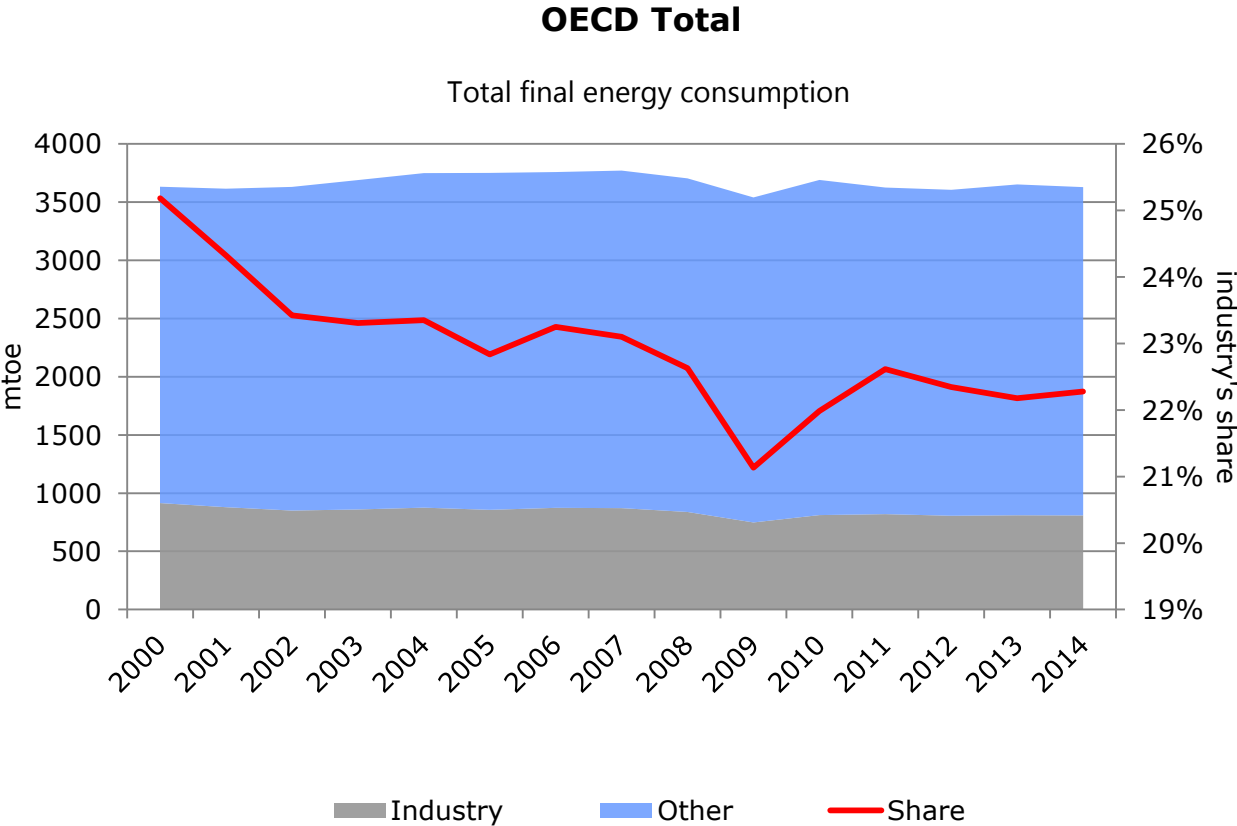


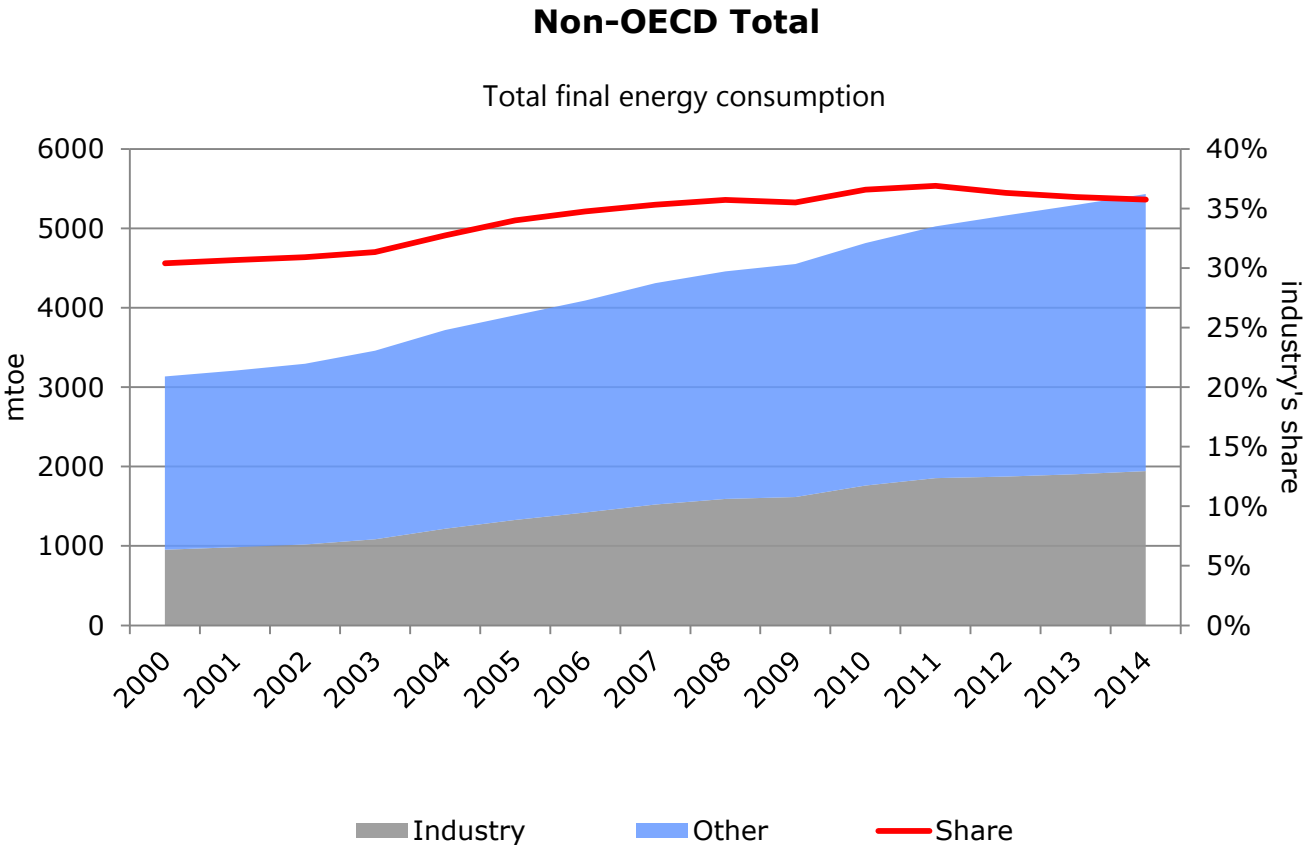
IEA members and Brazil, People's Republic of China, India, Indonesia and the Russian Federation, Source: IEA [Energy Efficiency 2017](#)

World

Total final energy consumption

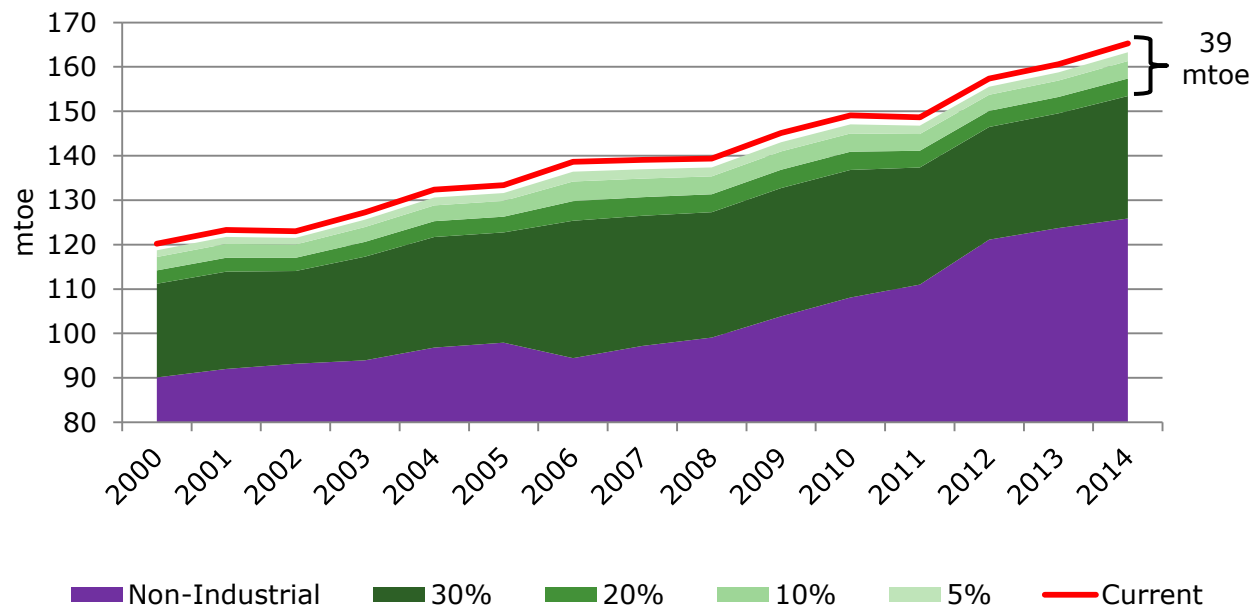






Energy efficiency in the context of energy supply

Indonesia



A 30% reduction of total final industrial energy consumption is equivalent to more than half the energy that is imported

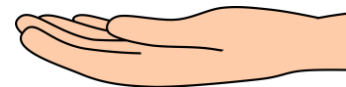
Energy efficiency is good... but there are many demands on government funding



Minister of finance

Image: Cartoonsmix

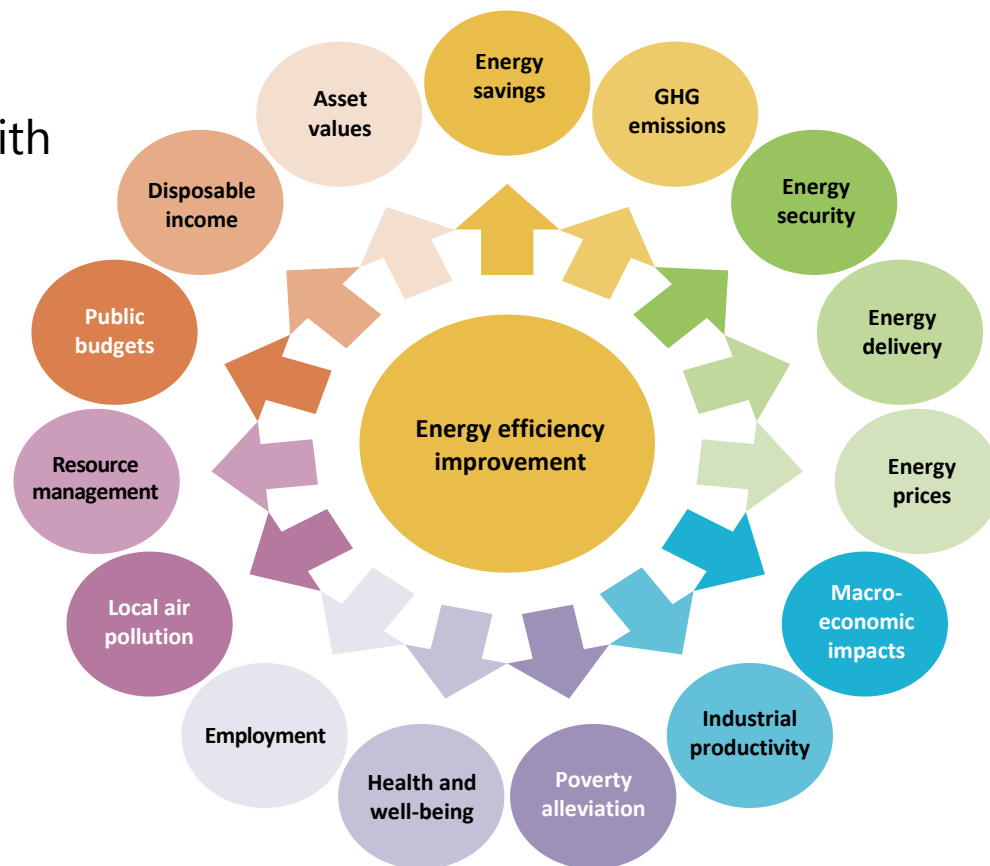
Energy efficiency
is good



Energy Efficiency
Agency

Identify all of the benefits

Build support by aligning your
Industrial energy efficiency policy with
national priorities!



Case study: multiple benefits

- Australian aluminum producer – system optimisation to reduce energy demand – increased production by 3000 tonnes per year (value USD 6 million)



Case study: multiple benefits

- Peruvian smelting company (secondary lead)
- Implemented suite of energy efficiency measures including new burner, fuel mix optimisation, upgraded refractory bricks and furnace hood
- Reduced energy (value less than USD 2000) and increased extraction of lead by 34.7 tonnes per year (value almost USD 17000)



Before



After



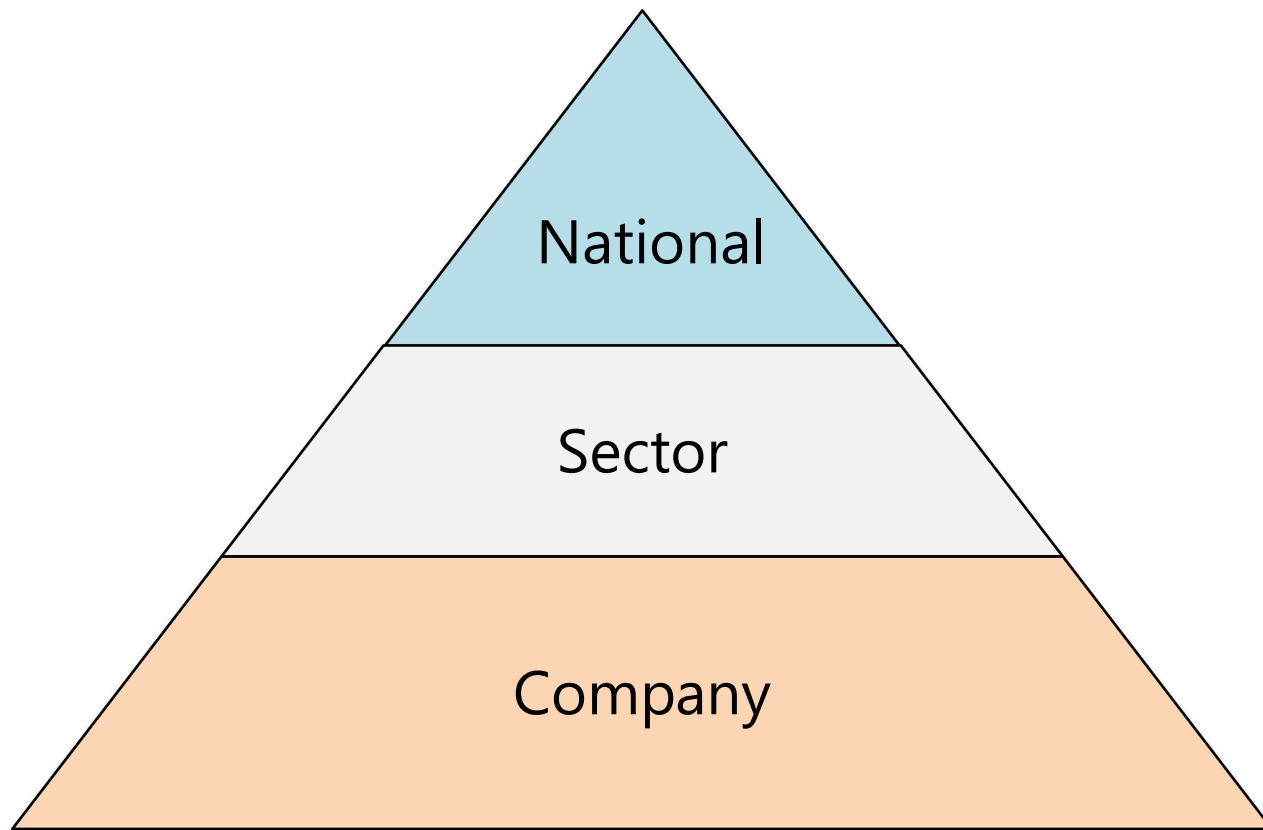
Benefits for companies

- Enhanced production
- Improved product quality
- Reduced liability
- Improved work environment
- Improved working conditions
- Reduced need for maintenance
- Improved environmental performance
- Improved profit margins
- Improved reputation

Benefits for economies

- Reduced pollution
- Reduced environmental impacts
- Deferred need for new power plants and grid
- Lower need for energy imports
- Improved competitiveness of industry

Benefits occur at different economic levels



Energy efficiency

- Reduce energy use (all types, specific fuels)
- Improve efficiency (not necessarily the same as reducing use)
- Reduce GHG emissions – counteract climate change

Multiple benefits

- Reduce air pollution
- Make environmental improvements
- Improve energy security
- Avoid need for new energy capacity
- Improve security of supply
- Improve competitiveness of industry
- Stimulate innovation
- Stimulate development of service and technology markets
- Create new jobs



- Policy mechanisms including energy management programmes, minimum performance standards for industrial equipment (esp. electric motors) and other policies have **contributed** to a 20% fall in industrial energy **intensity** between 2000 and 2016...
- If energy efficiency has so many benefits however, why is policy needed?

Information

- lack of access
- too much information
- no time, not a priority
- perception that energy efficiency measures could have a negative impact on production



Capacity

- no internal expertise
- equipment vendors lack skills and incentives
- low external consultant quality (or no consultants)

Economic and finance

- lack of internal finance – how return on investment is calculated
- energy efficiency projects not seen as competitive
- no capacity to write bankable projects
- local financial institutions not supportive
- low energy prices



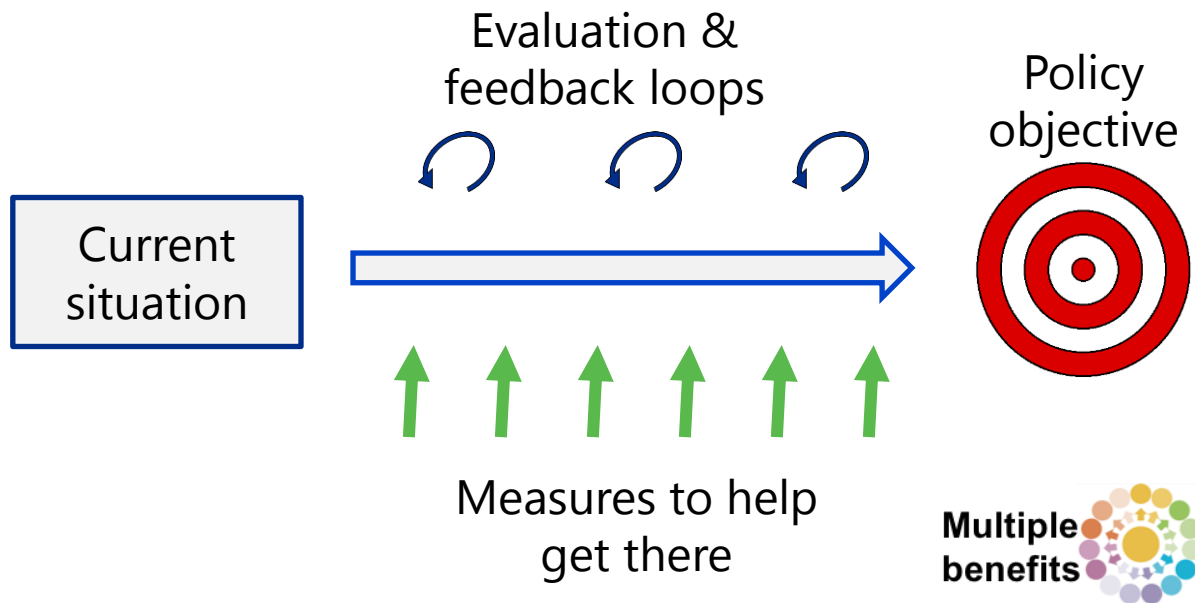
Regulatory barriers

- utility business model
- fossil fuel subsidies

What are the key barriers in your country context?



- Policy makers need to answer a fundamental question ... How can policy overcome barriers to deliver benefits?



- Energy efficiency policy-makers have to effectively articulate why government intervention is needed and how best to intervene

Types of data:

- Data on industrial energy use
- Data on fuel mix
- Data on sector specific use (e.g. energy used by textile industry)
- Data on specific energy use (e.g. energy per ton of clinker)
- Data to assess potentials

Data sources:

- National statistics
- Data from energy utilities
- Reports from companies (perhaps part of environmental reporting?)
- Samples, surveys
- Data from international organisations and other countries

- What other types of data are useful?
- What other sources are available?



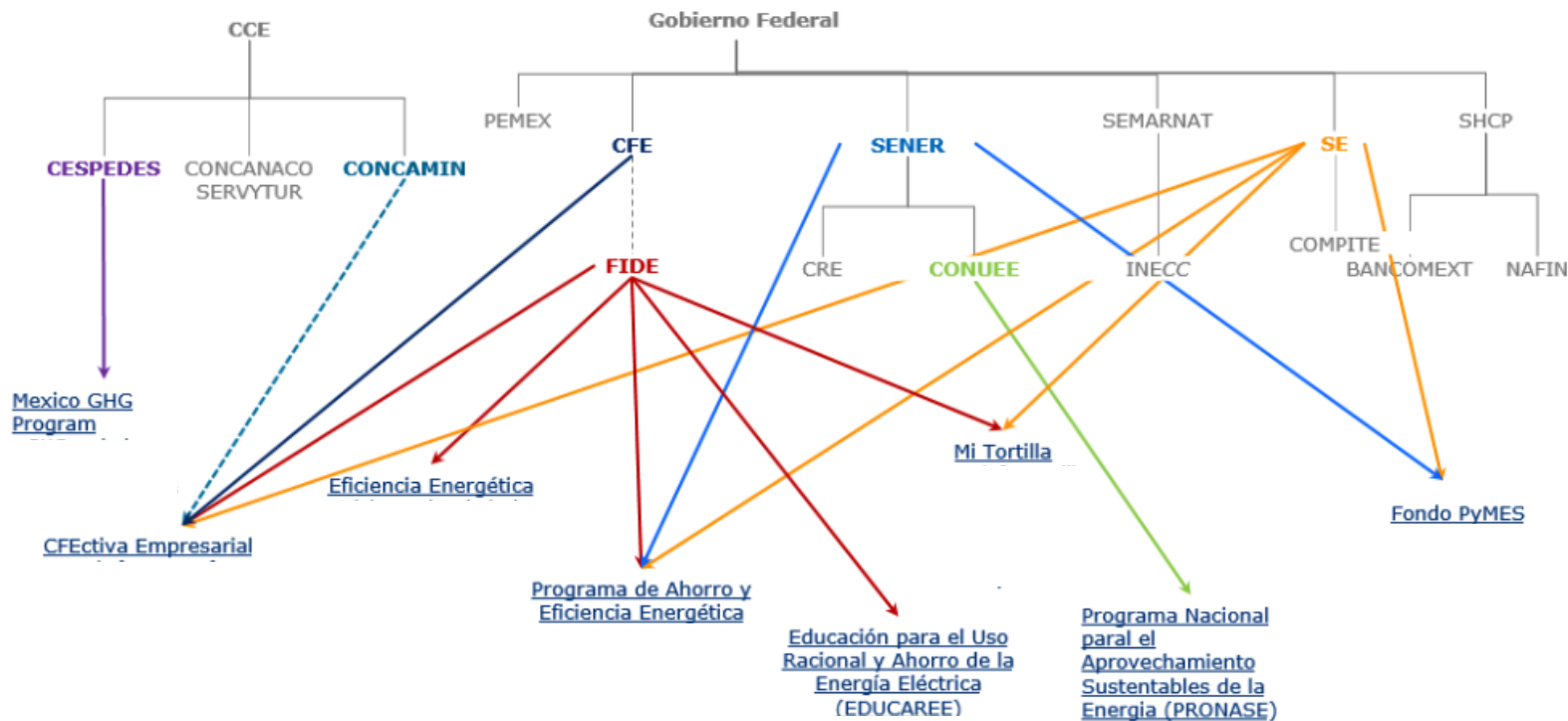
Identify existing policies and programmes

- National policies and programmes (climate, environment, business development, trade development, buildings energy efficiency, equipment energy efficiency)
- Municipal or regional programmes
- Donor-led initiatives

Analyse existing policies and programmes

- Scope and scale
- Successes & failures
- Possible synergies
- Possible negative impacts
- Duplication risk

Mapping policies in Mexico



What could the rationale include?

- ✓ Energy use trends
- ✓ Importance of energy efficiency
- ✓ Objectives
- ✓ Defined target group
- ✓ Energy efficiency potentials
- ✓ Barriers
- ✓ Multiple benefits
- ✓ Measures and mechanisms
- ✓ Mapping of policies and programmes

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What else
could be
included?

What would
convince your
stakeholders?



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