



**WORKING DRAFT**

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# Energy management and efficiency – an operational point of view

## Energy Efficiency in the ASEAN region

Supporting material for the speech on Energy efficiency in emerging economies: challenges and opportunities

Oct 18, 2011



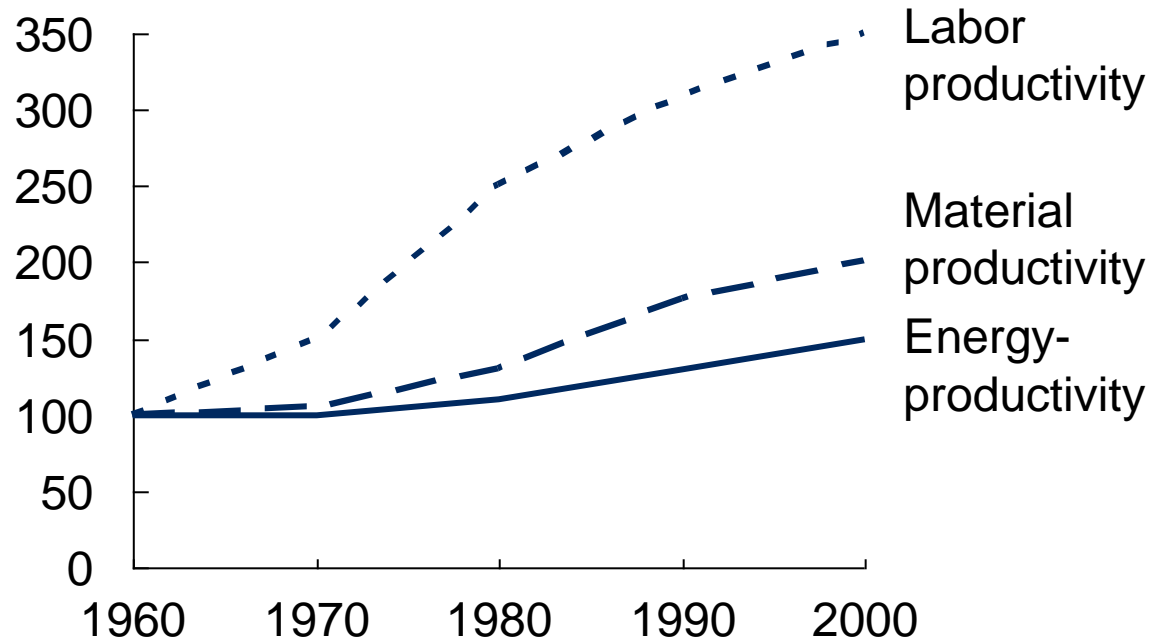
# Across most economies, Energy efficiency has been neglected for a long time, lagging behind labor and material productivity

## Low transparency on energy consumption

- Energy costs only available at plant level
- Energy utilization not tracked rigorously
- Few standardized procedures for energy management
- Lack of energy cost allocation according to consumption

## Energy productivity has been neglected

### Typical productivities changes in developed economies

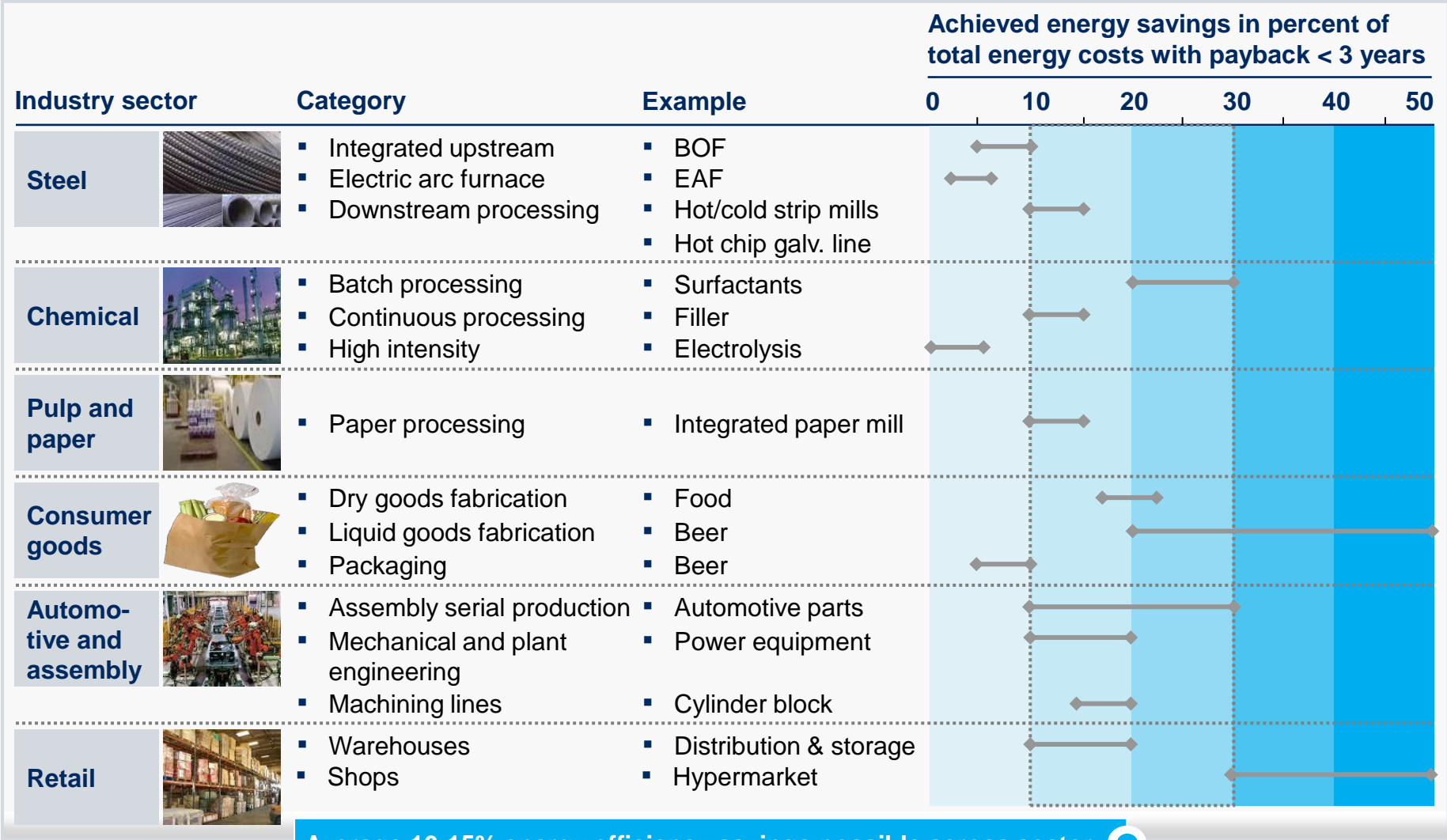


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# Energy efficiency can be improved by 10 – 15% across all sub sectors of industry

Impact achieved  
Min ← Max

Percent

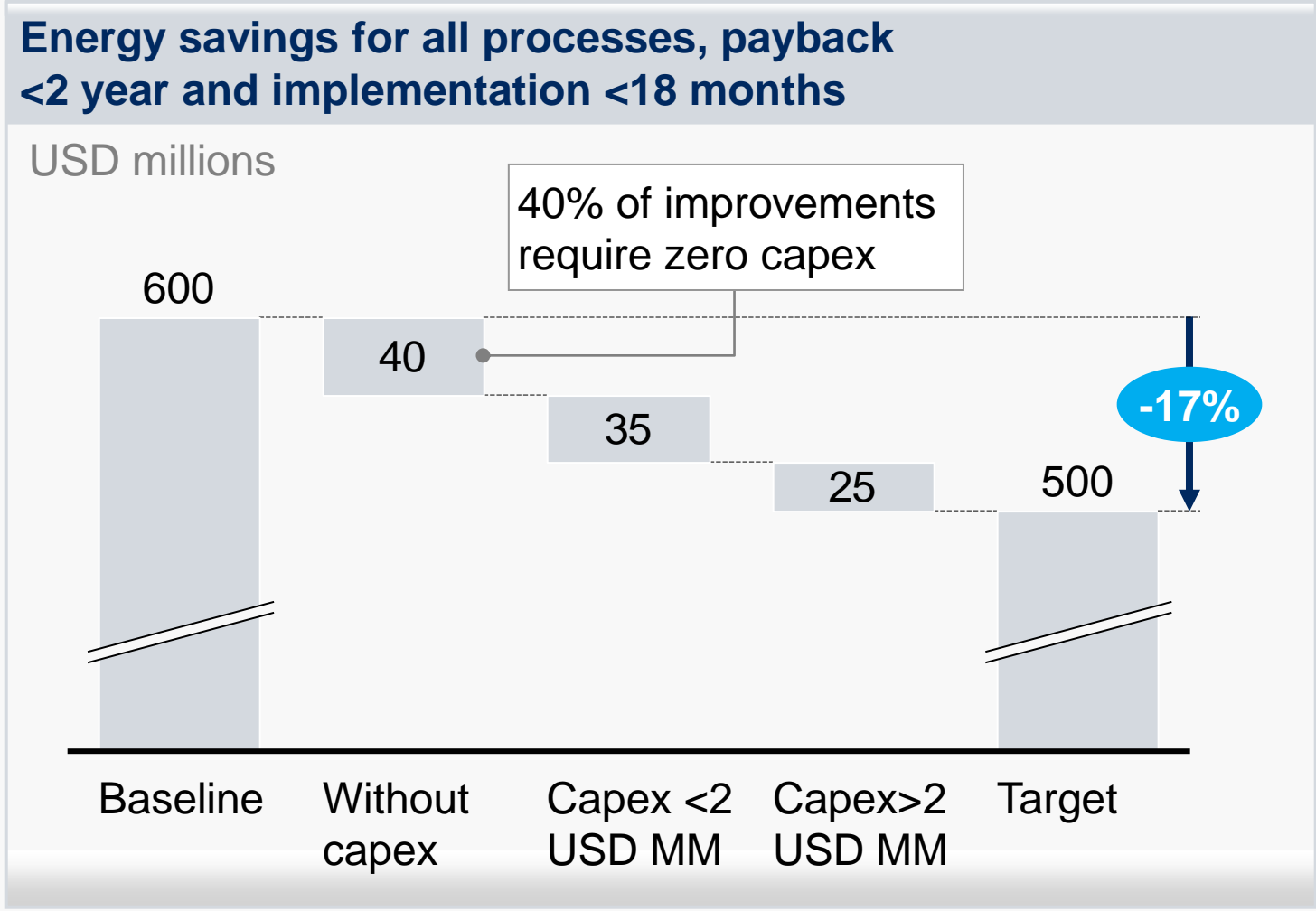


Average 10-15% energy efficiency savings possible across sector

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# Good news for emerging economies facing high WACC – Many energy efficiency opportunities can be realized without significant investments

Typical industrial company



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# In the journey to capture energy efficiency opportunities, there are five key barriers



**Lack of awareness & aspiration**



**Lack of capabilities**



**“Return on mgmt. time”**



**Lack of Capital allocation**

## Typical observations of practices and mindsets

- Lack of top-down targets
- Typically low or no targets for improving existing assets

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- Lack of capabilities to optimize energy efficiency across value chain

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- Typically, no “silver bullets”; thus “return on time” compared to other operational levers perceived as low

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- Difficulty in justifying investments
- Limited capital allocated towards higher ROI projects

# Policy makers and governments can help in multiple areas...

## Technical System



## Management Infrastructure



## Mindsets & Capabilities

## Encouraging private sector adoption

- Create transparency on current performance, and on opportunity – e.g. industry wide benchmarking
- Lowering the “barrier to entry” – subsidise selected initial efforts
- Helping access latest technology and expertise from around the world, at competitive prices
- Create “adult” learning zones e.g. Green Factories
- Help create role model industries, that inspire the community

# Adopt adult-learning principles – example of a Green Model Factory



## Training facility for client capability building

- Real production environment with all energy types represented
- Highly interactive learning experience
- All levers across full scope of transformation
  - Technical system
  - Management Infrastructure
  - Mindset & Behaviors
- Workshop examples
  - “Excitement workshop on energy productivity”
  - Full-day-training “Energy efficiency in production”
- Already ~12 of our clients took advantage of this unique facility
- Co-developed with Technical University Munich

