

# **Formulation of Industrial Energy Efficiency Policy and Related Instruments in Iran**

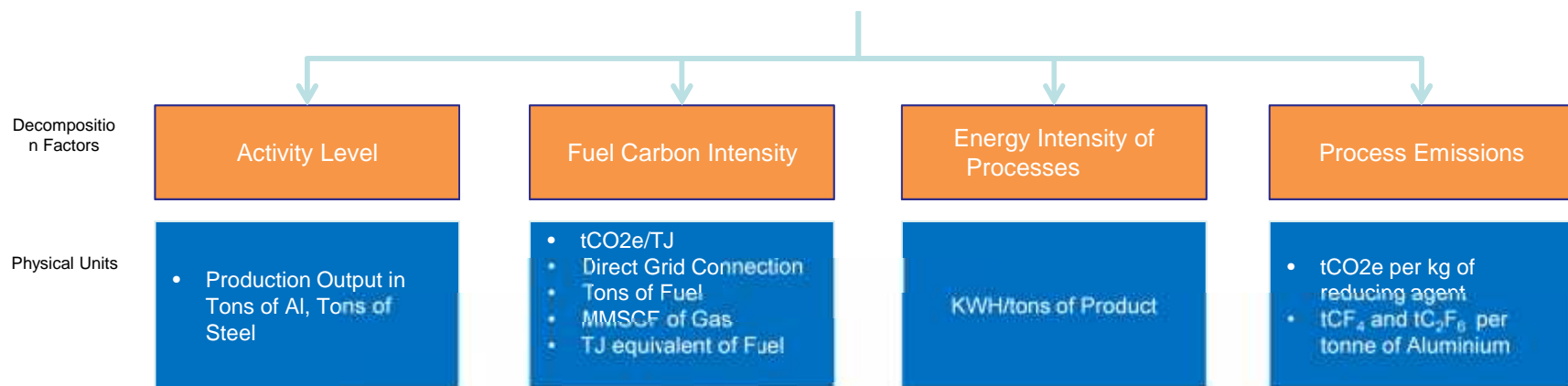
*General Approach to Industrial EE Policy Making*

**Tehran 14/10/2014**

# Industrial EE Analytical Approach



## Total GHG Emissions



$$E_y = A_y \times \frac{MWh_y}{A} \times \frac{EF_y}{MWh_y} + \text{Process Emissions } y$$

**Where:**

$E_y$  = Total GHG Emissions from Industry in year  $y$

$A_y$  = Activity level in industry in year  $y$  (e.g. total tons of cement, steel etc.. Produced)

$MWh/A$  = Energy input per 1 unit of activity (e.g. per 1 ton of cement)

$EF_y/MWh$  = Carbon intensity per MWh in year  $y$

# Intergovernmental Panel on Climate Change (IPCC)



**Energy efficiency (E/M):** Energy is used in industry to drive chemical reactions, to create heat, and to perform mechanical work. The required chemical reactions are subject to thermodynamic limits.

**Emissions efficiency (G/E):** In 2008, 42% of industrial energy supply was from coal and oil with 20% from gas, and the remainder from electricity and direct use of renewable energy sources. These shares are forecast to change to 30% and 24% respectively by 2035 (IEA, 2011a) resulting in lower emissions per unit of energy.

**Process Emissions** N<sub>2</sub>O emissions from adipic and nitric acid production have decreased almost by half between 1990 and 2010 (EPA, 2012a) due to the implementation of thermal destruction and secondary catalysts.

**Material efficiency in production:** Material efficiency—delivering services with less new material—is a significant opportunity for industrial emissions abatement, that has had relatively little attention to date

**Material efficiency in product design** Although new steels and production techniques have allowed relative light-weighting of cars, in practice cars continue to become heavier as they are larger and have more features.

## **Using products more intensively**

**Reducing overall demand for product services** Industrial emissions would be reduced if overall demand for product services were reduced

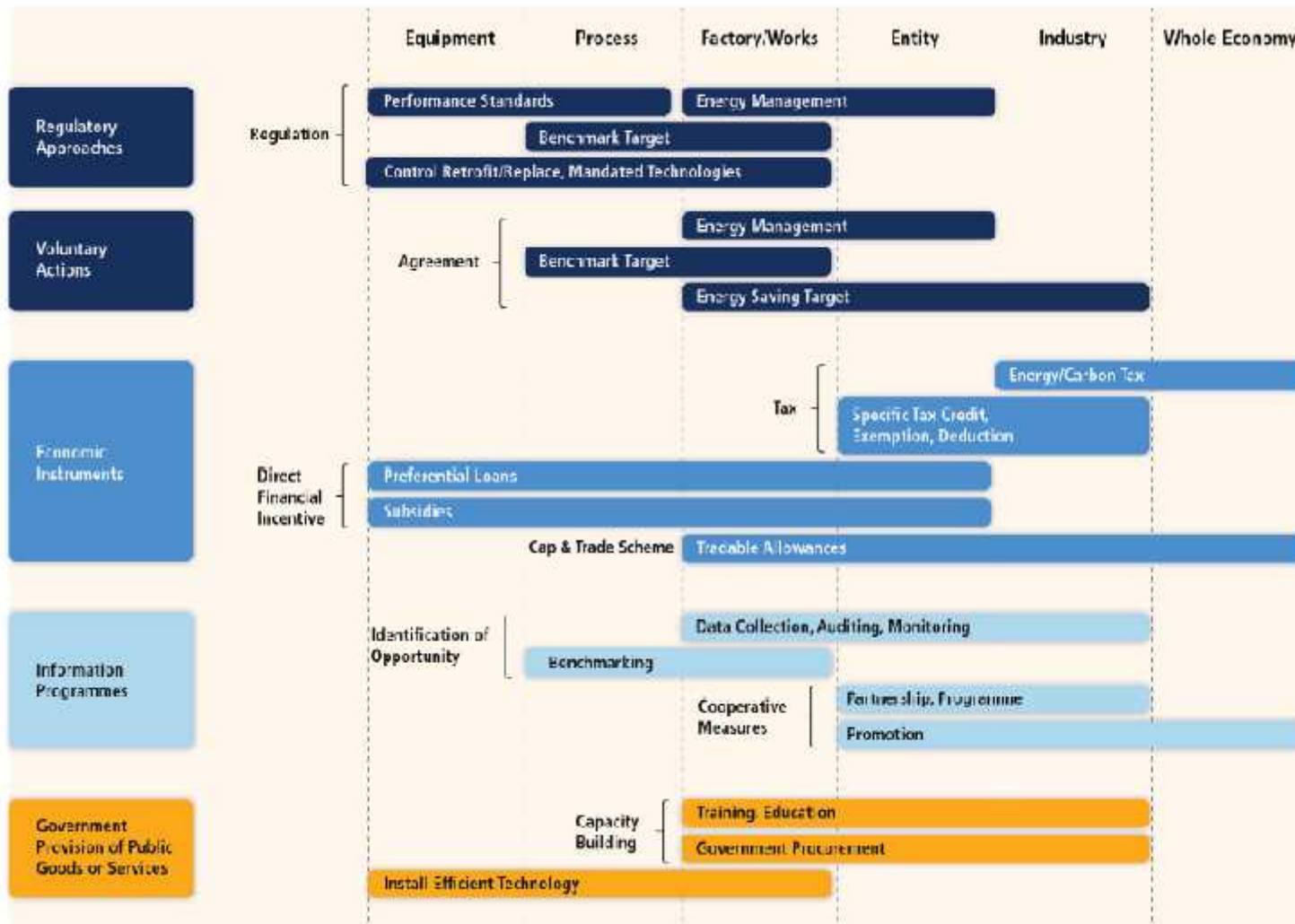
# Key Steps in EE Policy Making



The key programme elements of a target-setting programme are:

1. target-setting process;
2. identifying energy-saving technologies and measures; benchmarking current energy efficiency practices;
3. establishing an energy management plan (see section 4.3 below);
4. conducting energy efficiency audits;
5. developing an energy-savings action plan;
6. developing incentives and supporting policies;
7. measuring and monitoring progress toward targets, and
8. programme evaluation.

# Industrial EE Policies Overview





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