

AIM/Enduse Model: An Overview

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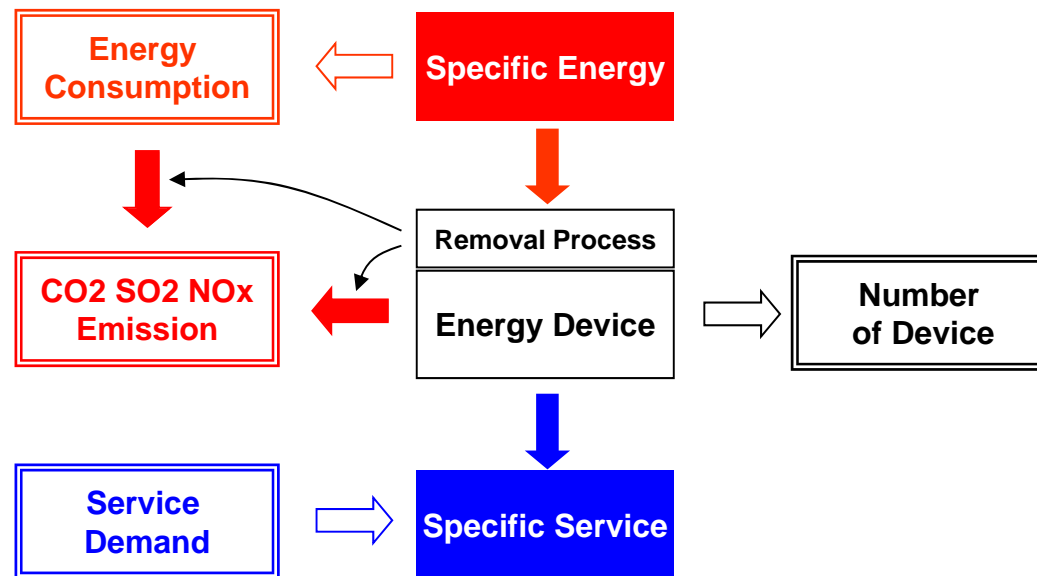
AIM/Enduse

A bottom-up model that simulates flows of energy and materials through technology systems, from primary resources to satisfaction of final services, for analysis of country-level policies relating to GHG mitigation, domestic emissions mitigation, technology and energy selection

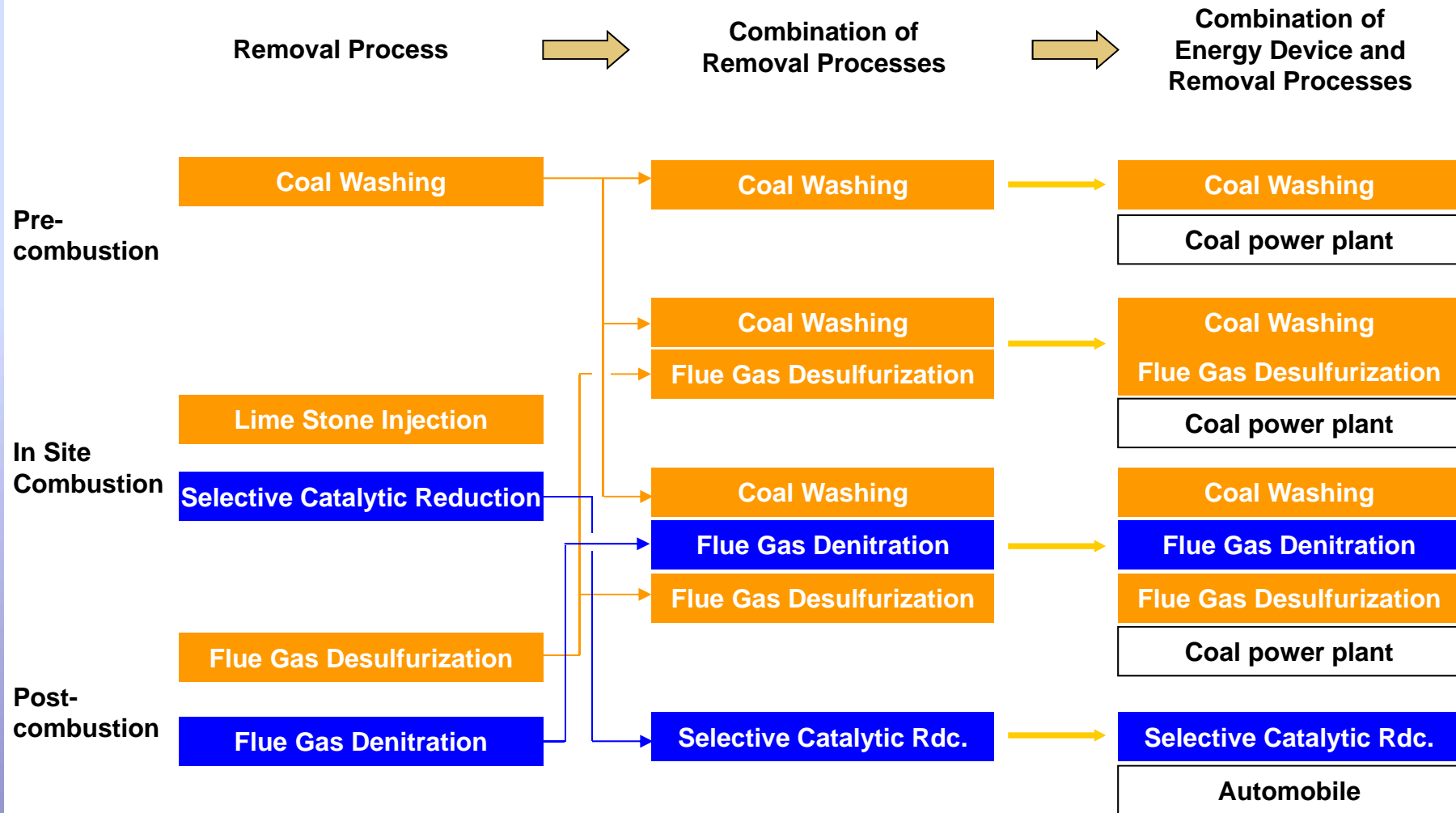
Key Features

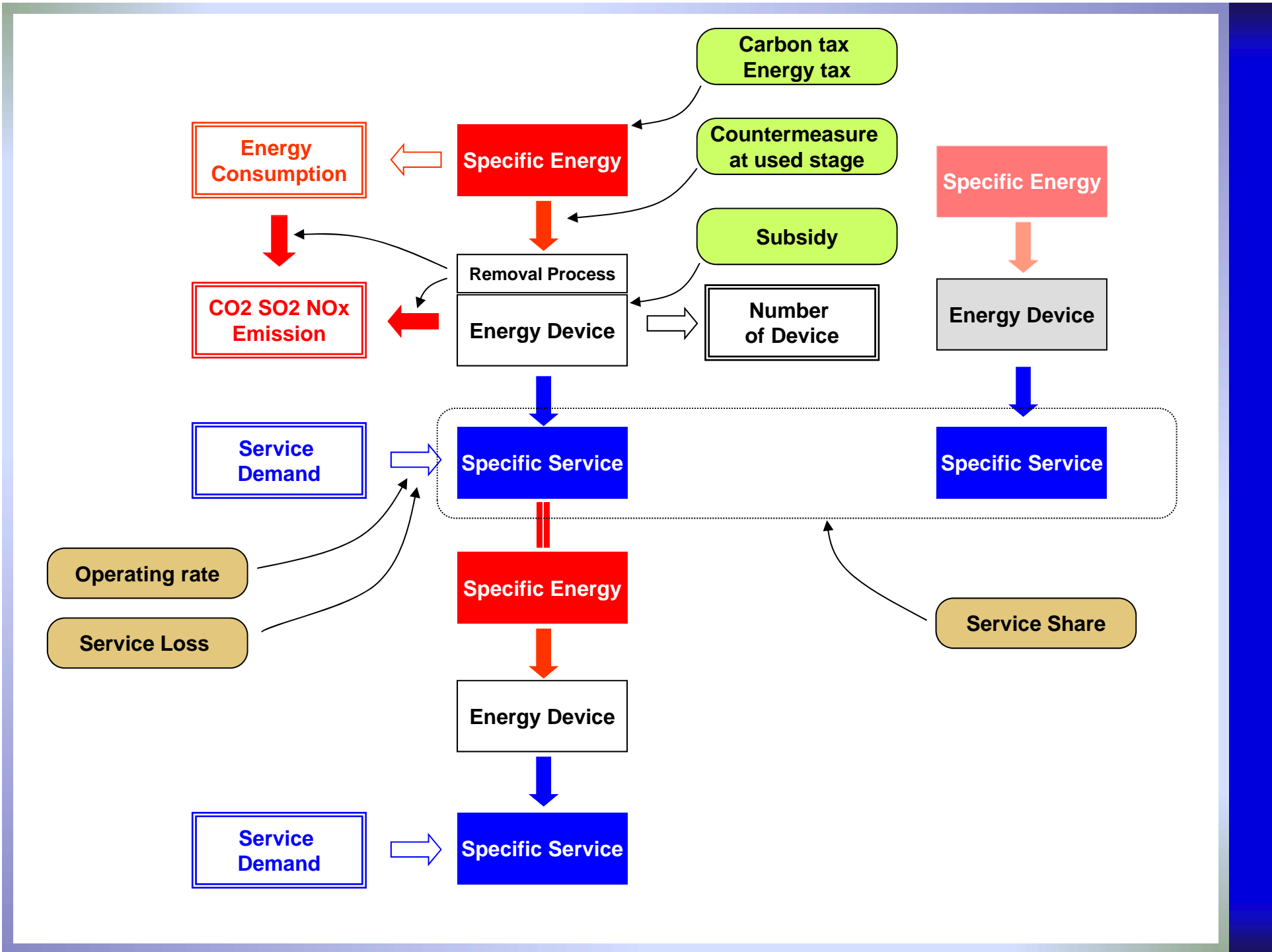
- ❁ Technology and Energy/Material flows
- ❁ Technology selection (Linear programming)
- ❁ Energy saving device and desulfurization/denitration device
- ❁ Stock transfers and Multiple year simulations
- ❁ Extensive data requirement
- ❁ Outputs (Energy consumption, CO₂/SO₂/NO₂ emission etc.)
- ❁ Scenario/countermeasures analysis
- ❁ User-friendly interface

Energy-Technology-Service Linkage



Combination of Device and Removal Processes





Object Function

$$\begin{aligned}
 TC = \sum_i \left(\sum_{(l,p) \in W_j} \left\{ \overset{\text{Investment cost for recruited device}}{\overset{\circ}{C}}_{l,p} \cdot r_{l,p,i} + \overset{\text{Investment cost for added removal process}}{\sum_{p_1} \overset{\circ}{C}^x}_{l,p_1 \rightarrow p} \cdot M_{l,p_1 \rightarrow p,i}} \right. \right. \\
 \left. \left. + \left(\underset{\text{Operating cost}}{g_{l,p,i}^0} + \sum_k \underset{\text{Energy cost}}{(g_{k,i} + \varepsilon_{k,i}) \cdot (1 - \xi_{k,l,i}) \cdot E_{k,l,p,i}} \right) \cdot X_{l,p,i} \right\} + \sum_m \underset{\text{Tax for emission}}{\zeta_i^m} \cdot Q_i^m \right) \rightarrow \min
 \end{aligned}$$

Setup Tax and Regulation

