International Energy Agency
1974•2014

CHP/DHC Collaborative meeting: Buildings-related activities

Paris, 21 January 2016

John Dulac

www.iea.org

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ETP Buildings-related activities 2016/2017

ETP Buildings model development activities

- ✓ Model conversion (excel to TIMES) with useful/final energy demand forecasts and technology choice matrix (including stock accounting and costs)

IEA energy statistics improvement activities

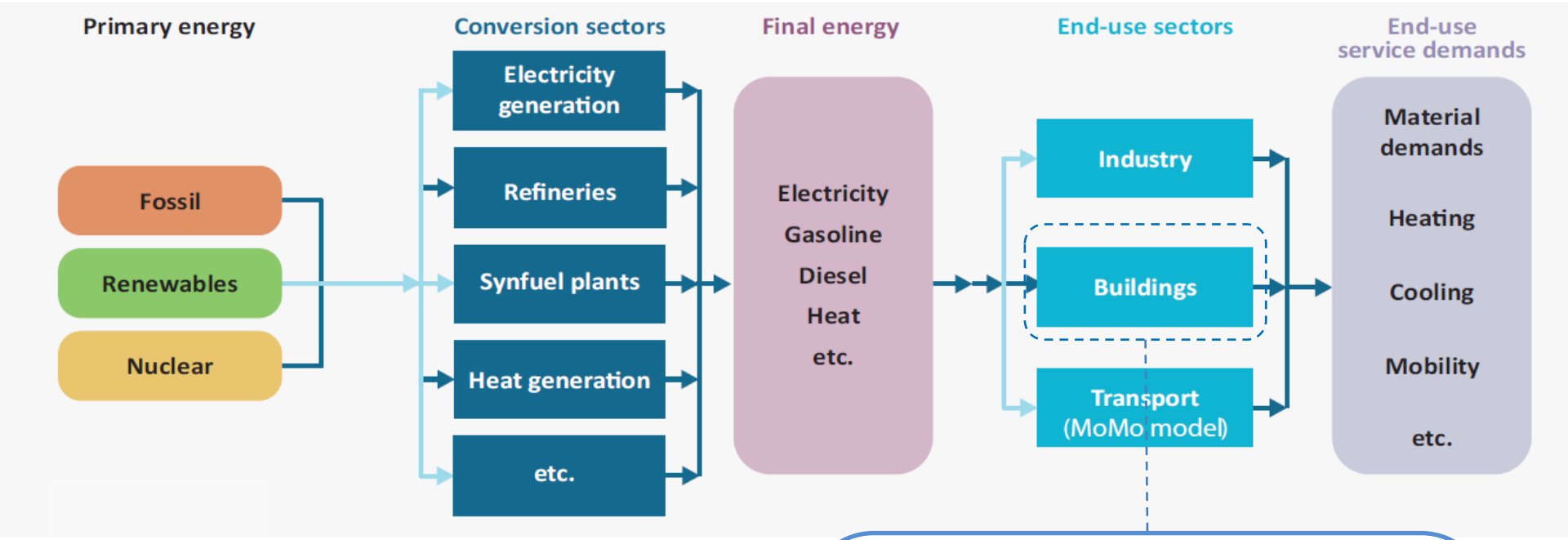
- ✓ Work with partners (WEO, E4, external) on historic data validation (metrics project)
- ✓ Annual country/region focus on bottoms-up energy assessment/distribution (Mexico, India, Indonesia, China for 2015-16)

Analytical streams

- ✓ Opportunities and challenges of MEETING *and* going beyond 2DS in buildings
- ✓ Questions of decision structure and cost-effective investments with supply

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ETP Energy System Model



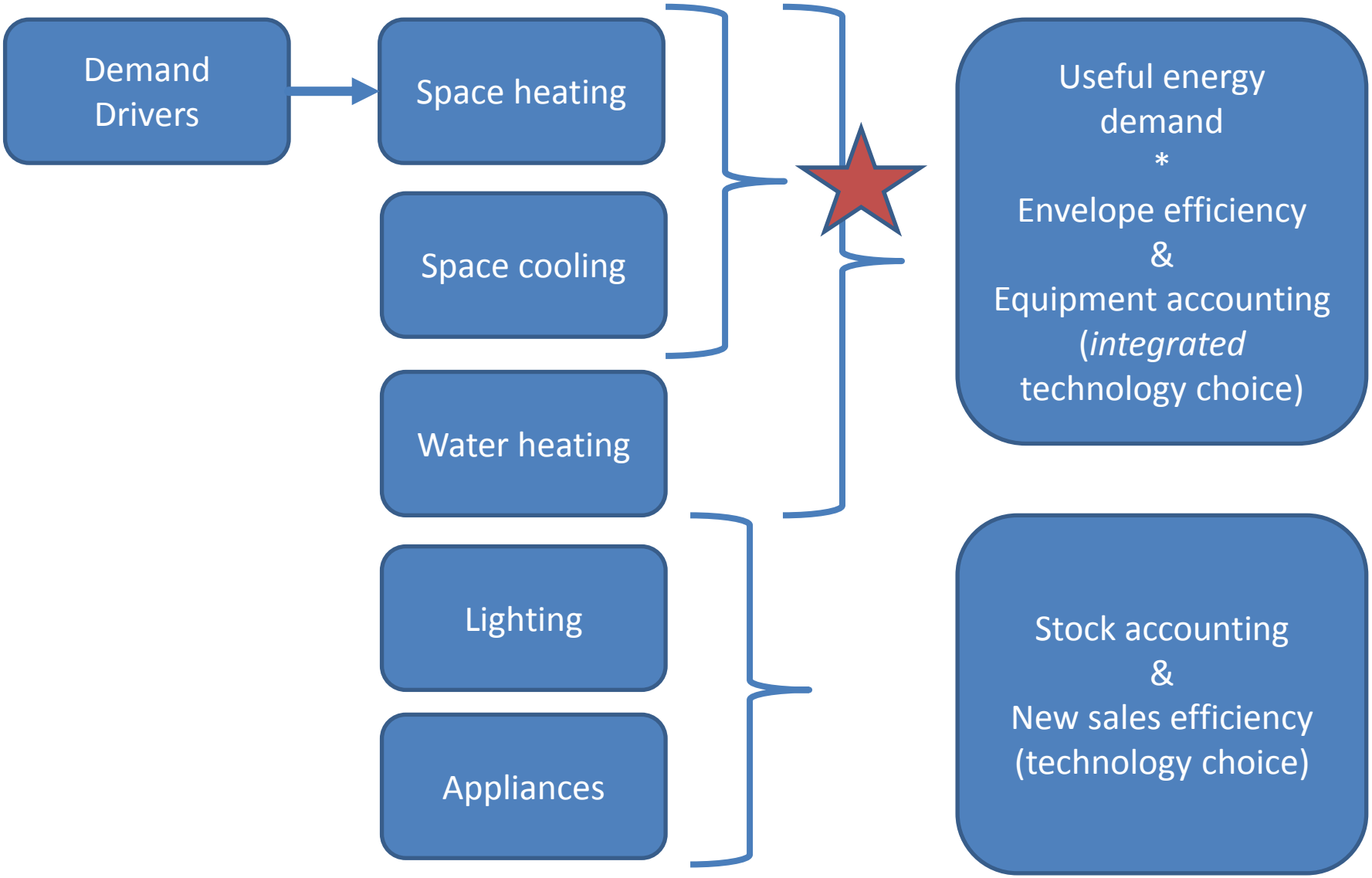
ETP Buildings Model:

- Residential and Non-residential (services)
- 6 major end-uses

  (heating, cooling, water, lighting, cooking, appliances, & 'other')
- 32 regions
- Time horizon up to 2075 (5yr time steps)

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ETP Buildings Model for Conversion



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ETP Buildings Model for Conversion

- ✓ **Space heating & cooling**
  - ✓ Envelopes: packaged costs (e.g. curves) for envelope efficiencies (ave)
    - ✓ For time being, by stock average
  - ✓ Equipment: boilers/furnaces (coil, oil, gas [condensing]) and potentially gas micro-CHP, electric resistance, heat pumps, DHC (geothermal…?), modern/conventional biomass, solar thermal
  - ✓ Fuel choice (by equipment type)
  - ✓ Very limited data (public) and extremely limited data on choices
  - ✓ Need for (1) technical efficiencies, (2) costs (and potential), (3) policy matrix, and (4) consumer decision feedback

Multiple Benefits?

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How could you contribute?

Modelling integration development activities & analytical streams

- ✓ Technology investments information for buildings related envelopes&equipment, especially *wrt* integrated DHC (e.g. case studies, feasibility studies, cost analyses)
- ✓ Update on best available related technologies (techno-economic performance): CHP, IEH recovery, heat pumps for integrated analysis
- ✓ Policy input (preferably by country) to inform model decision structure
- ✓ Tools/Methods/Indicators to comprehensively capture multiple benefits in integrated analysis

Policy side

- ✓ Information on business case/functional models
- ✓ Success (failure) stories in support of this analysis (for messaging), as with *Linking Heat and Electricity* report

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