Support for the Impact Assessment of a proposal to address maritime GHG emissions

ECCP WG SHIPS Meeting 3
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Agenda

- **Introduction to the study and the project consortium**
- **Overview of the project tasks**
- **Status of project and next steps**

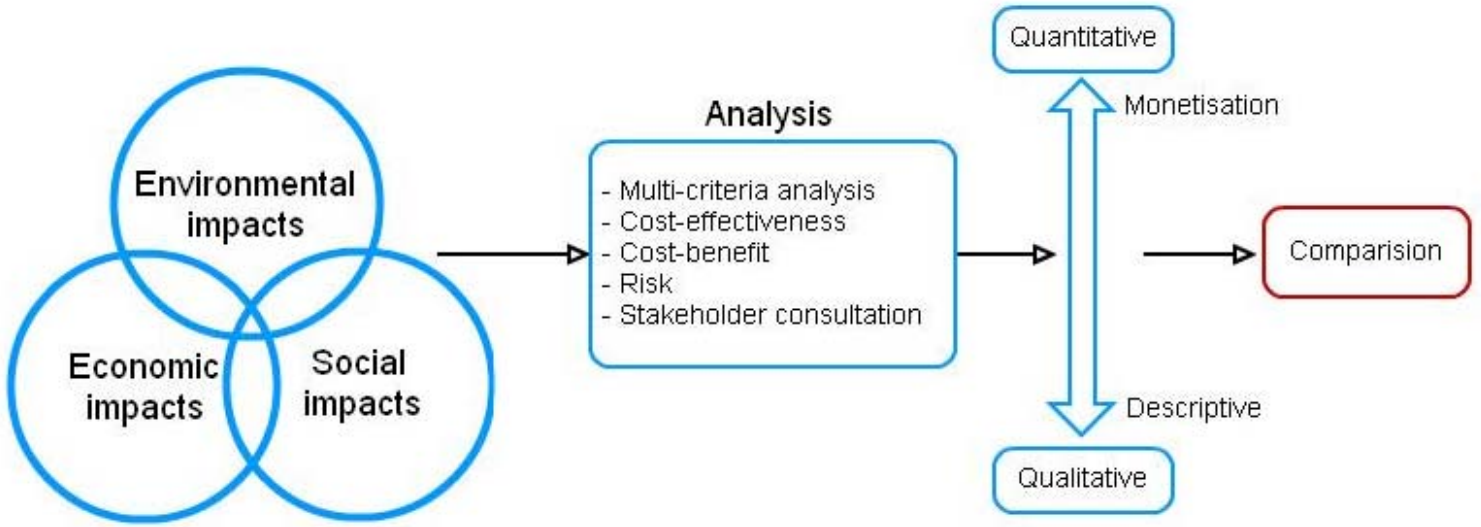
Project consortium roles

- **AEA:** lead contractor. Leading the **environmental** and **economic** impact assessment. Also responsible for **modelling GHG impacts** of policy options
- **AMEC:** leading the **social impact assessment**; responsible for developing **historical emissions** inventories
- **IHS Fairplay:** responsible for developing **bottom-up baseline estimates** of shipping emissions (2010-2050); contributions to impact assessment
- **Marintek:** **detailed information on costs/performance of abatement measures**; contributions to assessment of impacts on shipping sector
- **Milieu:** leading on **administrative/legal aspects** of all the policy options

Problem definition and policy proposals

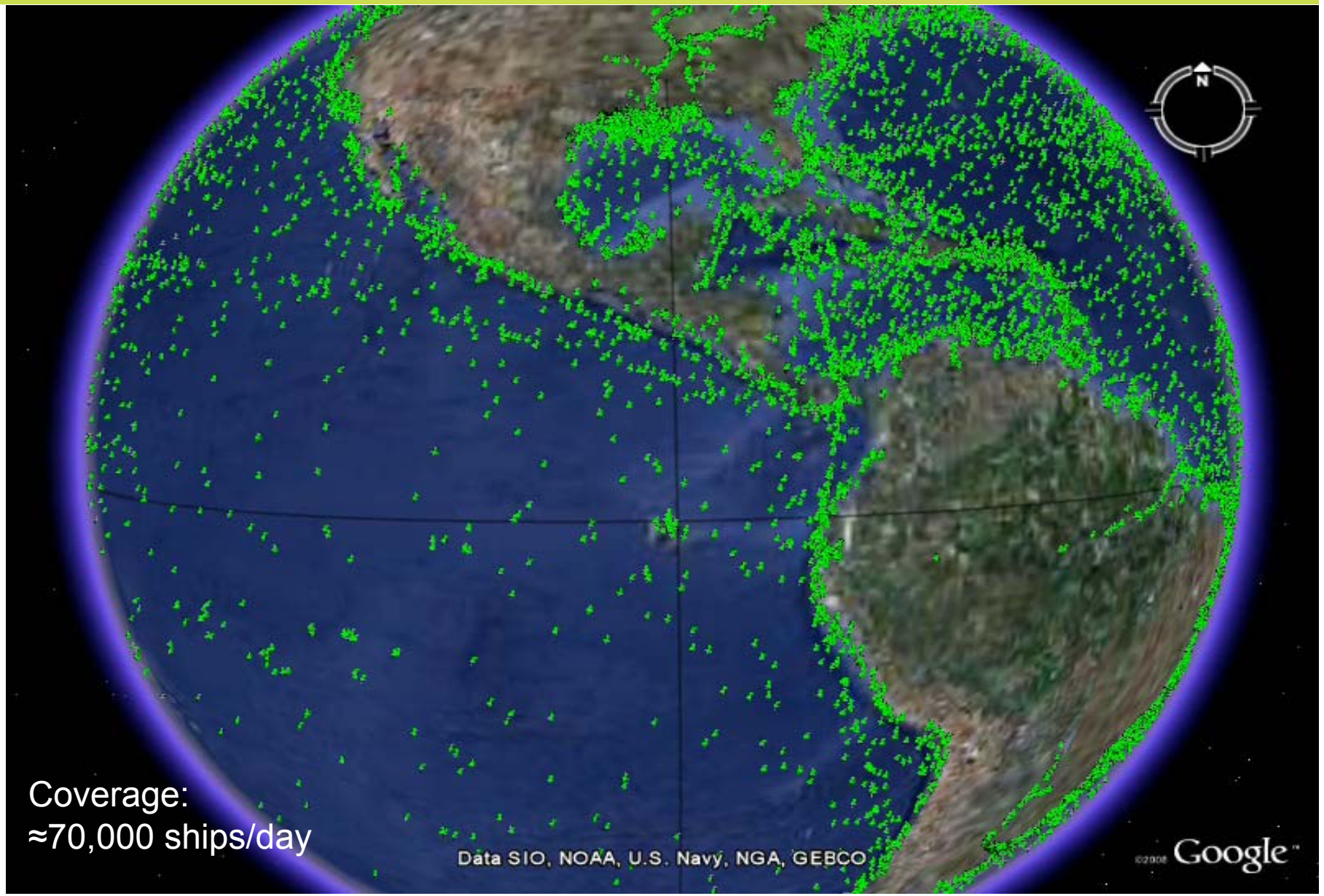
- **Problem definition:** Nature, scale and drivers of the problem
- **Policy objectives:** Definition of general, specific and operational objectives, as well as criteria to assess policy options
- **Design of policy options:**
    - Detailed description of each possible option, including administrative arrangements and related implementation tasks
    - Special assessment of the scope for evasion of each policy option

Assessment of policy impacts - overview

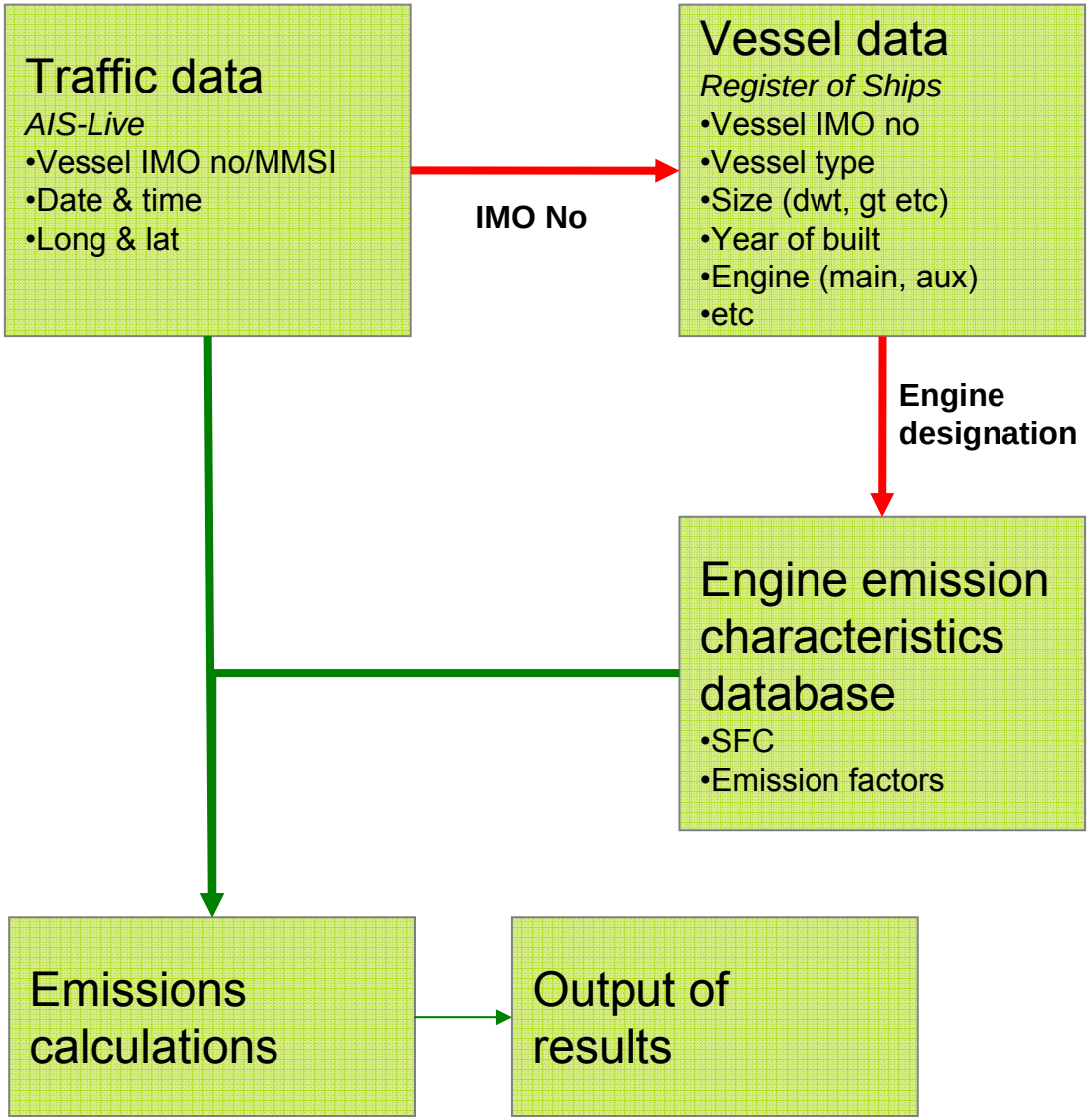


- Combination of quantitative and qualitative analysis to assess the impacts of each possible policy option
- Team will follow the EC Impact Assessment guidelines
- Range of emissions modelling activities will support the analysis
- Utilise skills from the whole consortium

Bottom-up baseline BAU emissions model

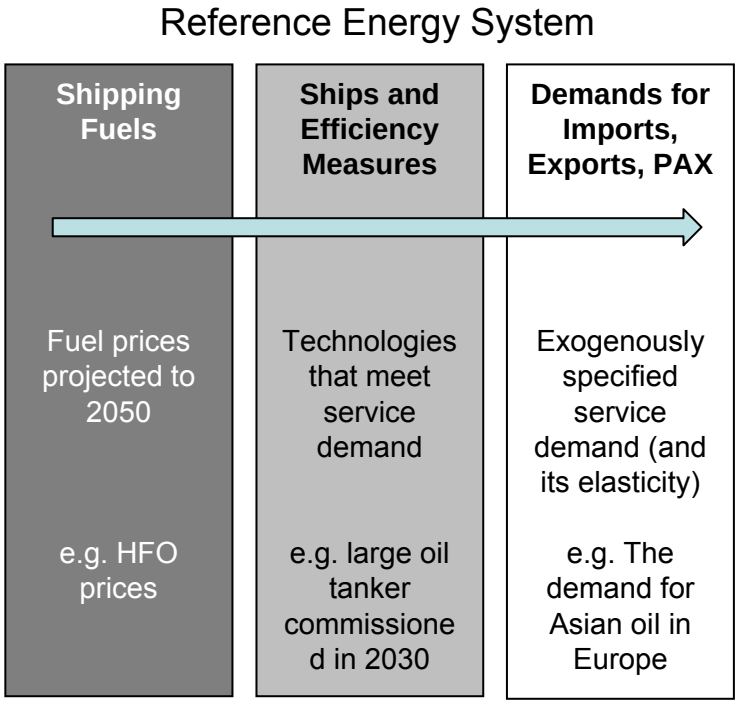


Bottom-up emissions model - model outline



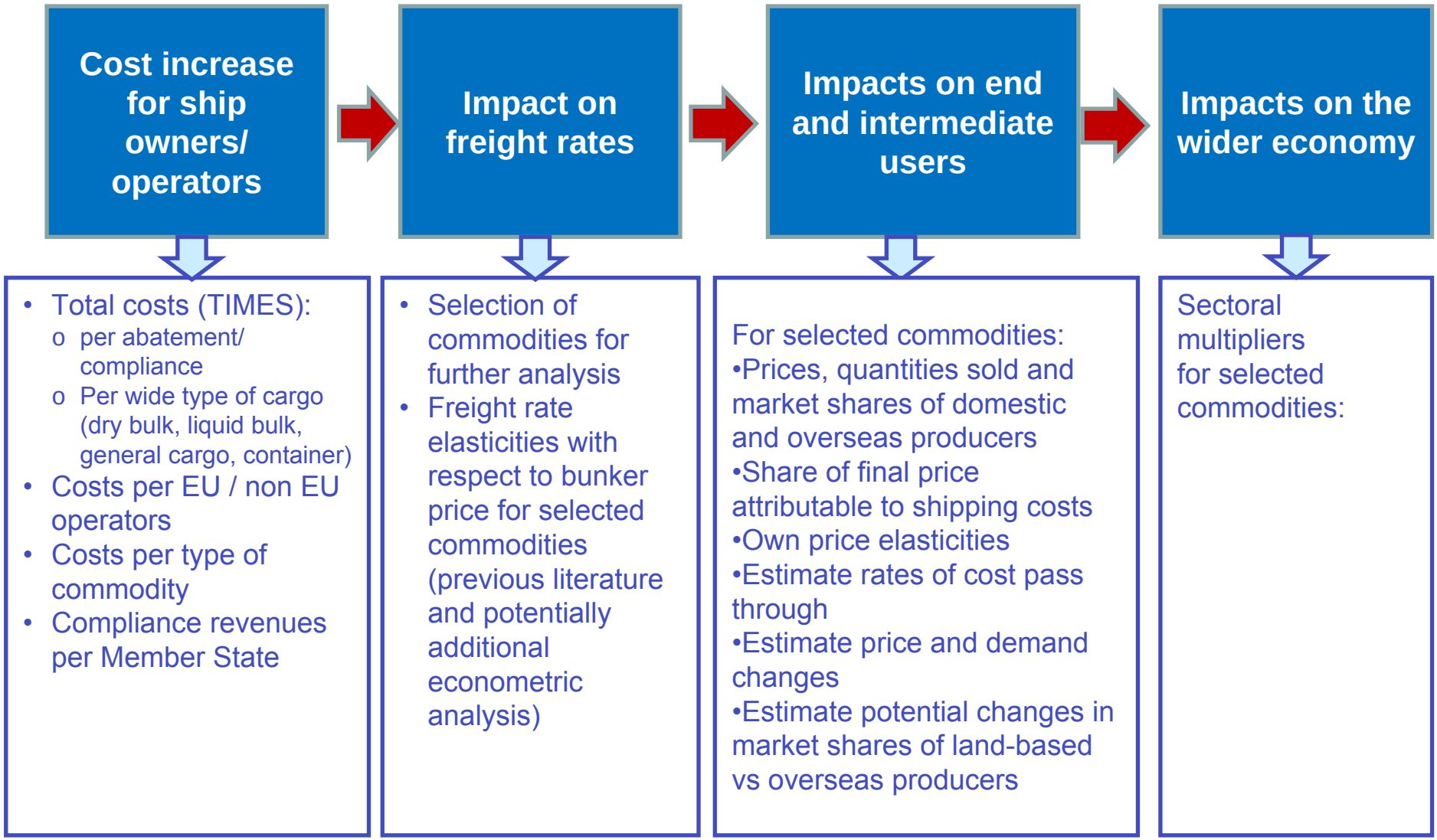
Analysing the impacts of policy options on emissions and costs: TIMES energy systems model

- **TIMES (The Integrated MARKAL-EFOM System):**
  - Partial equilibrium on sector/system of interest – bottom-up, technology-rich
  - Maximises macro metric: combined producer and consumer surplus
  - Multi-regional model, with ability for shipping routes to change in response to policy
  - Calibrated to 2010 shipping movements data
  - Model chooses shipping investment to maximise utility of sector in response to policy



Analysis of economic impacts

3. Quantitative analysis of economic impacts:



Analysis of environmental impacts

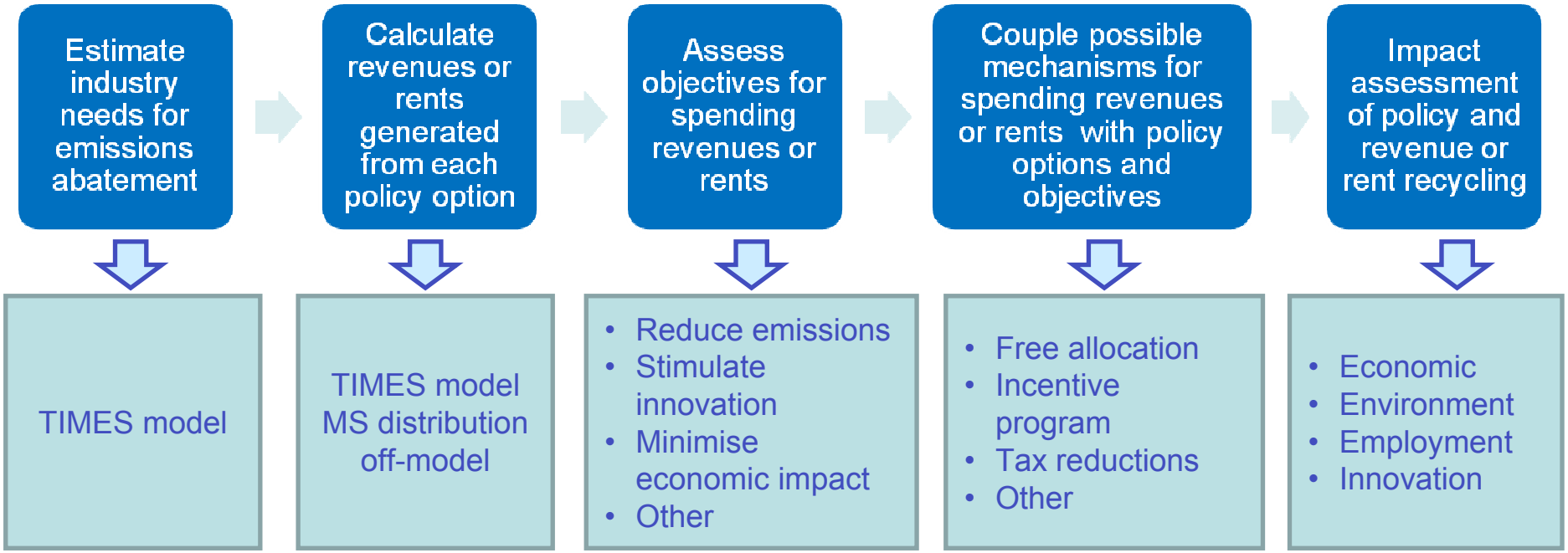
Environmental impacts
The climate
Transport and the use of energy
Air quality
Biodiversity, flora, fauna and landscapes
Water quality and resources
Soil quality or resources
Land use
Renewable or non-renewable resources
The environmental consequences of firms and consumers
Waste production / generation / recycling
The likelihood or scale of environmental risks

Analysis of social impacts

- **Aim:** Understand how companies may adjust operations to comply/respond to each policy option
- Relies on outputs of economic/environment assessments
- Social impact categories to be considered:
  - Employment and labour market
  - Standards and rights related to job quality
  - Social inclusion and protection of particular groups
  - Equality of treatment and opportunities, non-discrimination
  - Public health and safety

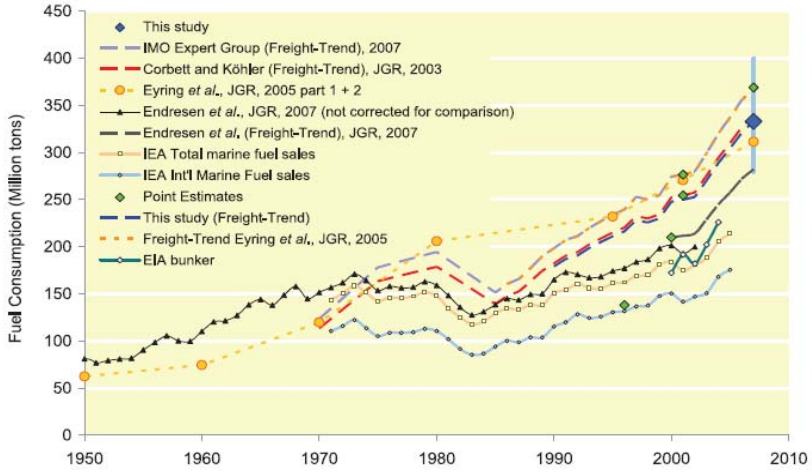
Revenues and rents

Objective: Assess the impacts of different uses of revenues/rents from possible market-based measures



Quantitative assessment of historical emissions

- **Method:** 2010 bottom-up baseline (IHS) - back-cast (top-down) emissions to previous years
- Up to 5 scenarios (years): including 2005 and 1990
- Use disaggregated 2010 baseline emissions and back-cast using historical trade data
- Method used in IMO Second GHG study



Source: Second IMO GHG study 2009

Analysis of administrative and management arrangements for possible policies

- Information gathering
- Synergies/interactions with other initiatives and policies
- Synergies with existing systems/procedures
- Identification of possible new systems and procedures – and legislative requirements
- Estimates of administrative burden on ship owners, operators, other key stakeholders
- Analysis of costs and cost effectiveness

Status and next steps

- **Baseline emissions model in development**
- **TIMES shipping model in development**
- **Analysis of environmental, social and economic impacts will be complete by March 2012**

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