



This project is funded by the European Commission's  
Directorate-General Climate Action



# EU Transport GHG: Routes to 2050 II

## Critical Paths for 2020 and Alternate Routes to 2050

Presentation by Matthew Morris (AEA)

First Stakeholder Conference

29 June 2011, Diamant Conference Center, Brussels

Partners

[www.eutransportghg2050.eu](http://www.eutransportghg2050.eu)



Transport and  
Environmental  
Policy  
Research

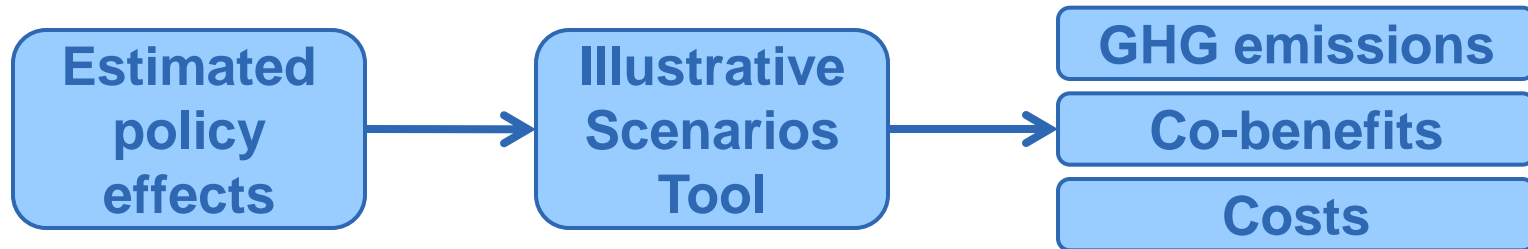
**TNO** innovation  
for life

# Overview

- **Recap:** the SULTAN Illustrative Scenario Tool
- **Task 6:** SULTAN development
- **Task 7:** GHG impact of 2020 policies
- **Synthesis:** how the Tasks will feed in to new Routes to 2050 scenarios
- Next Steps & Timing

# The SULTAN Illustrative Scenario Tool

What might we achieve, based on what we know?



- High-level calculator (not an in-depth model)
- Provides indicative estimates of policy impacts on EU transport
  - Primarily GHG emissions, also costs
  - High-level estimation of co-benefits (NO<sub>x</sub>, PM, Energy Security)
- Allow quick scoping of a wide range of transport policy options
  - What is the scale of action required?

**The tool aims to scope illustrative scenarios, and promote discussion amongst stakeholders**

**(freely available at [www.EUTransportGHG2050.eu](http://www.EUTransportGHG2050.eu))**

# SULTAN – Scope



EU-27  
(total only)



2010 – 2050  
(focus on after 2020)



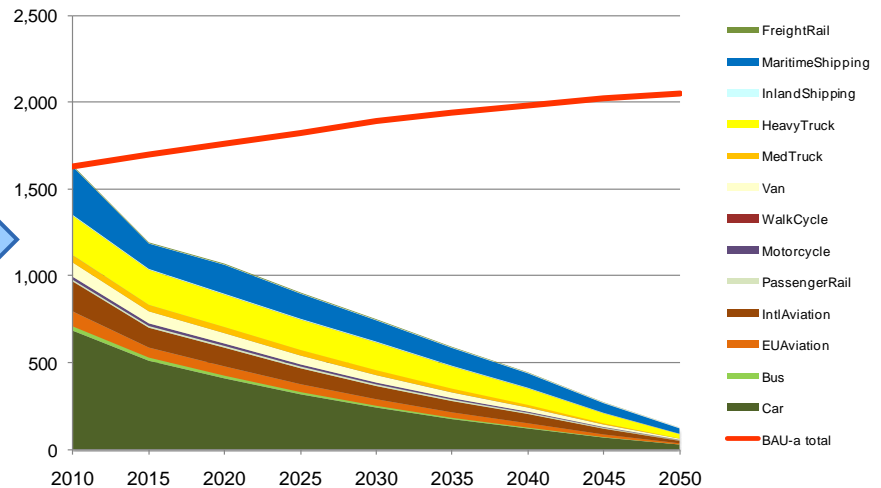
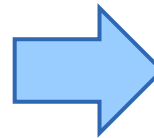
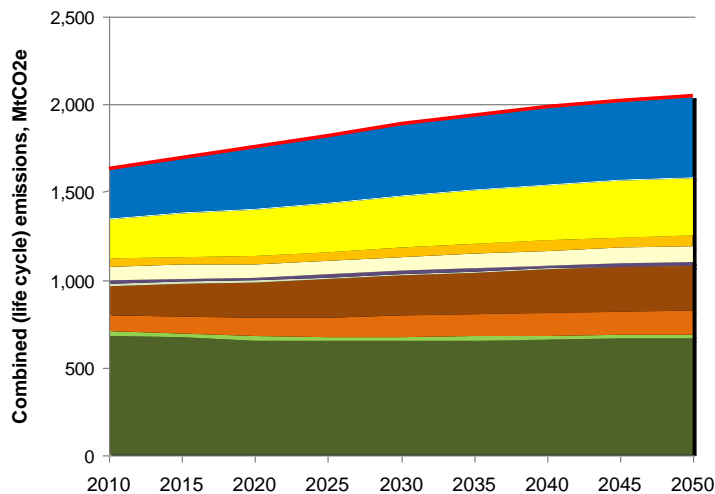
All major transport  
modes considered

- Business-as-usual data is included
  - Based on high-quality European datasets (e.g. TREMOVE, PRIMES)
- Users create ‘Policy Scenarios’ of alternative pathways to 2050
  - Users enter the impact of policies, SULTAN calculates the emissions (etc)

# SULTAN – Outcomes of the First Project

## What could be achieved by 2050, and what it would it take?

- Produced a business-as-usual projection to 2050
- Produced a range of scenarios based on:
  - Implementing individual policies & measures
  - Implementing suites of policies & measures



# Task 6: SULTAN Development

- Update baseline / business-as-usual dataset
  - Consistent with White Paper analysis (i.e. latest TREMOVE / PRIMES data)
- Improve functionality & transparency
  - Improve the ability to modify / switch between energy carrier assumptions and decarbonisation trajectories (including biofuels)
  - Make it easier for users to create scenarios by helping with:
    - Defining the penetration of different biofuels
    - Estimating demand response to changes in price
    - Estimating changes in efficiency and demand due to changes in speed limits
- Extend analysis (incorporating work done in other Tasks)
  - Monetisation of GHG, NO<sub>x</sub> and PM impacts (Task 1)
  - Metric to evaluate energy security impacts (Task 1)
  - Expanded functionality for assessment of carbon budgets (Task 7)

# Task 6: Policy Scenario Development

## **Updating existing Policy Scenarios using analysis in other tasks**

- Updating inputs where other papers improve quality of data
- Updating assumptions of impacts where other papers improve understanding
  - E.g. knock-on impacts (Task 3)

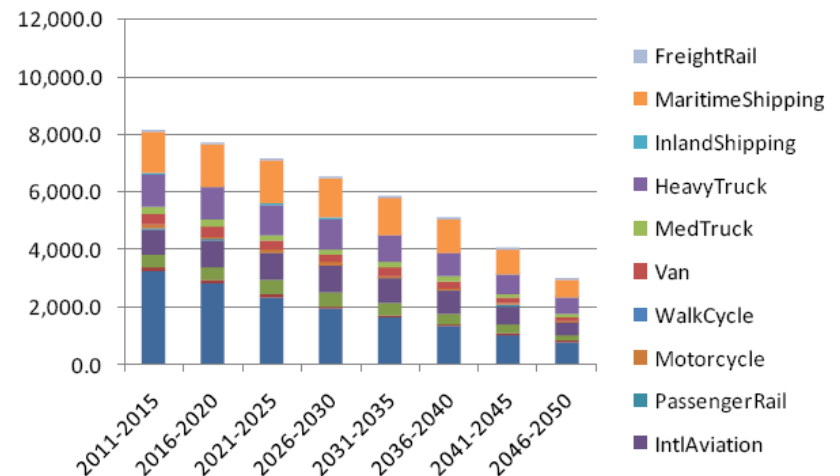
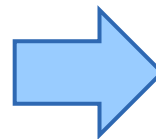
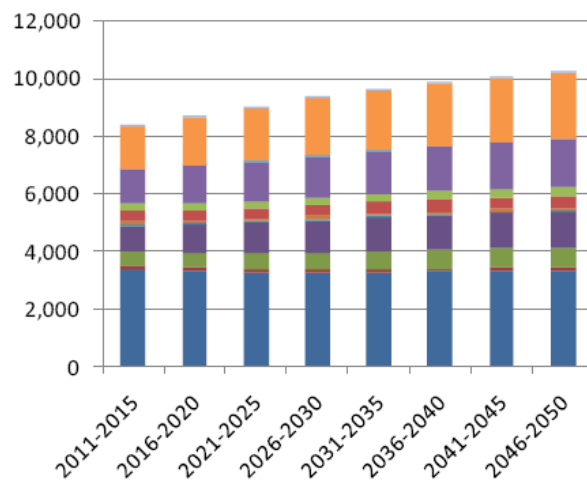
## **Creating new Policy Scenarios based on outputs of other tasks**

- Exploration of scenarios compatible with 60% reduction in GHG emissions
- Scenario variations to account for risks & uncertainties (Task 5)
- Scenarios based on alternative growth strategies (Task 4)

# Task 7: GHG Impact of 2020 Policies

## Main Objectives

- Examine the long-term emissions impacts of policies that could be introduced prior to 2020
- Identify additional policy measures that may need implementing prior to 2020 to achieve long-term reduction targets
- Explore the emissions trajectories, and emissions budgets, that may be required



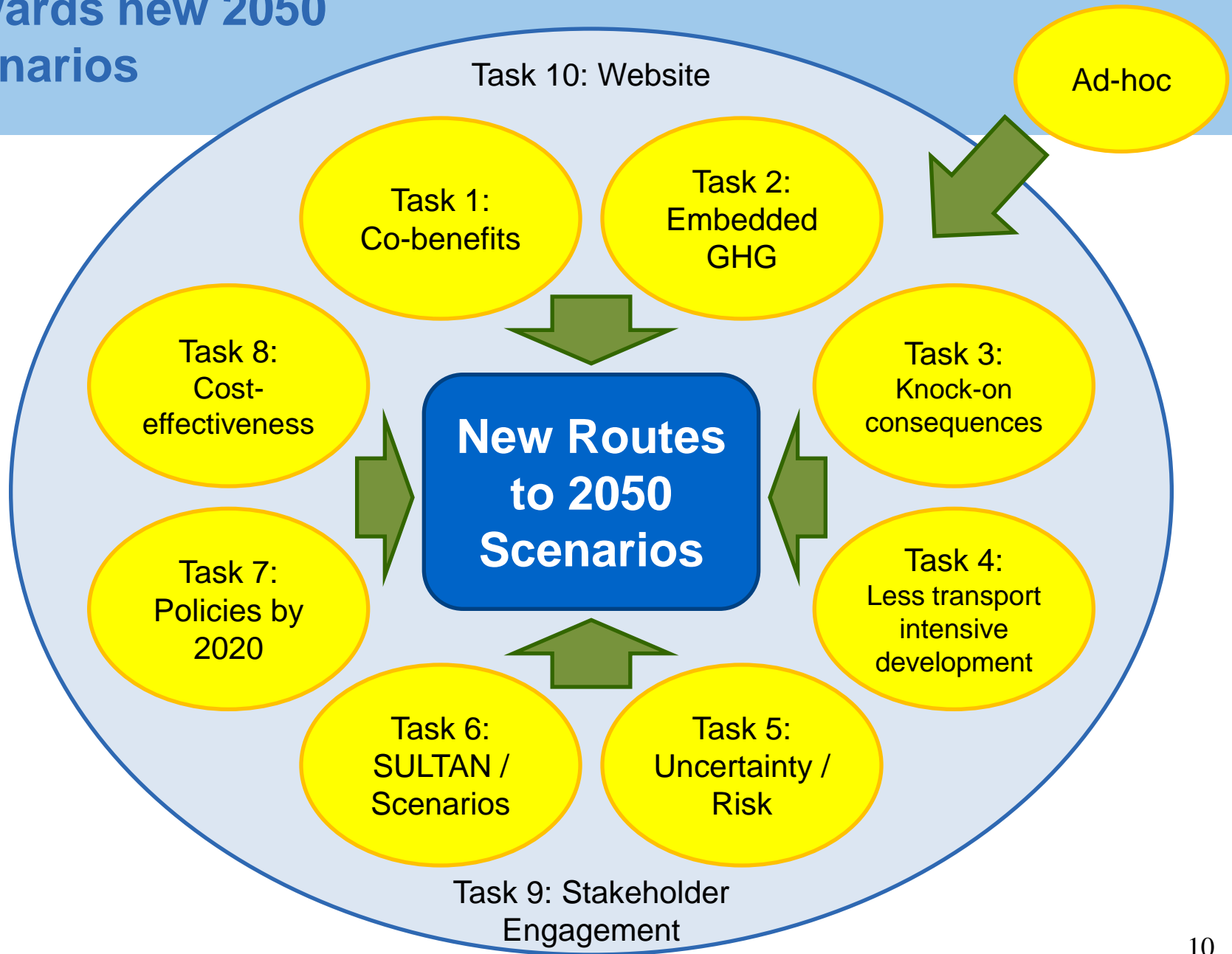


# Task 7: GHG Impact of 2020 Policies

## Three tasks:

1. Analysis of long-term impacts of policies that are in place / planned prior to 2020
  - Using SULTAN, quantify the impacts of existing policies
  - Establish current policy gap to 2050
2. Identification and analysis of additional policies that could be put in place prior to 2020
  - Define in SULTAN, establish potential impact to 2050
3. Exploration of transport emissions budgets
  - Propose budgets in line with the target of 60% emissions reductions by 2050
  - Use SULTAN to investigate BAU emissions in each 5-year period
  - Use additional policies to develop 5-year budgets to achieve 60% target

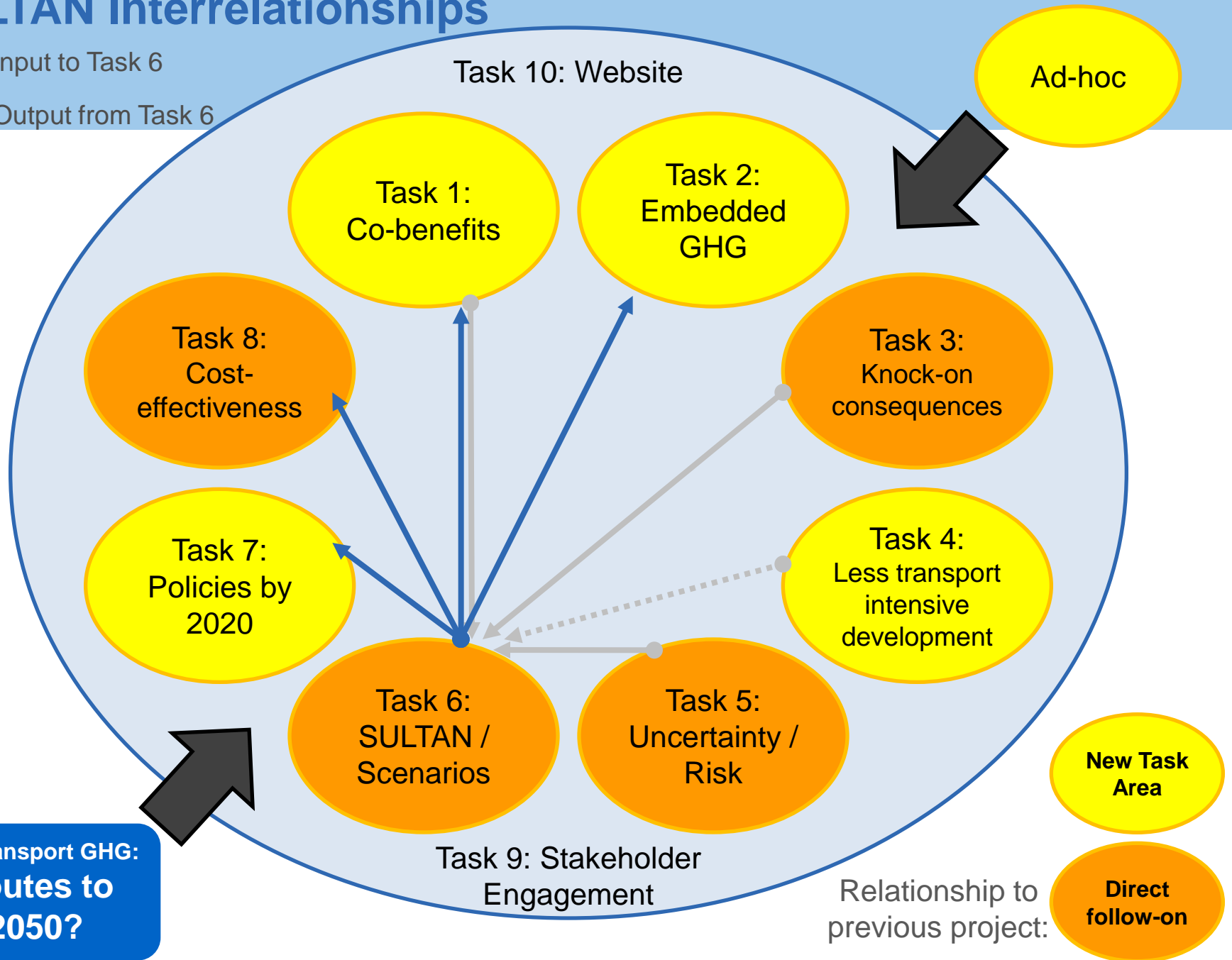
# Towards new 2050 Scenarios



# SULTAN Interrelationships

← Input to Task 6

← Output from Task 6



# How will the tasks link together?

## Task 1: Co-benefits

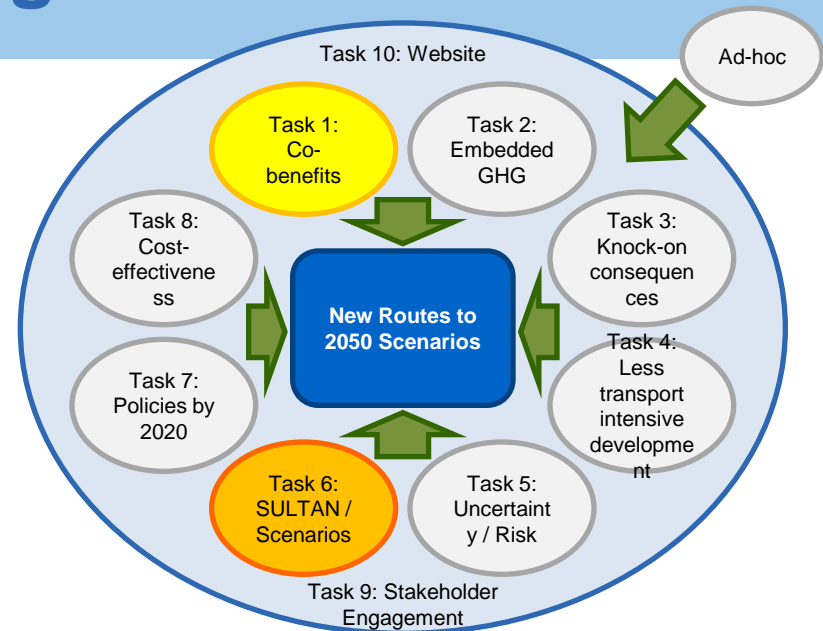
- Energy security, air quality, health

## Interaction with SULTAN (Task 6)

- Add assessment metric for energy security impacts
- Add monetisation of GHG, NO<sub>x</sub> and PM impacts

## Contribution to Final Routes to 2050 Scenario Analysis

- Evaluation of Scenarios will include an assessment of co-benefits



# How will the tasks link together?

## Task 2: Embedded GHG

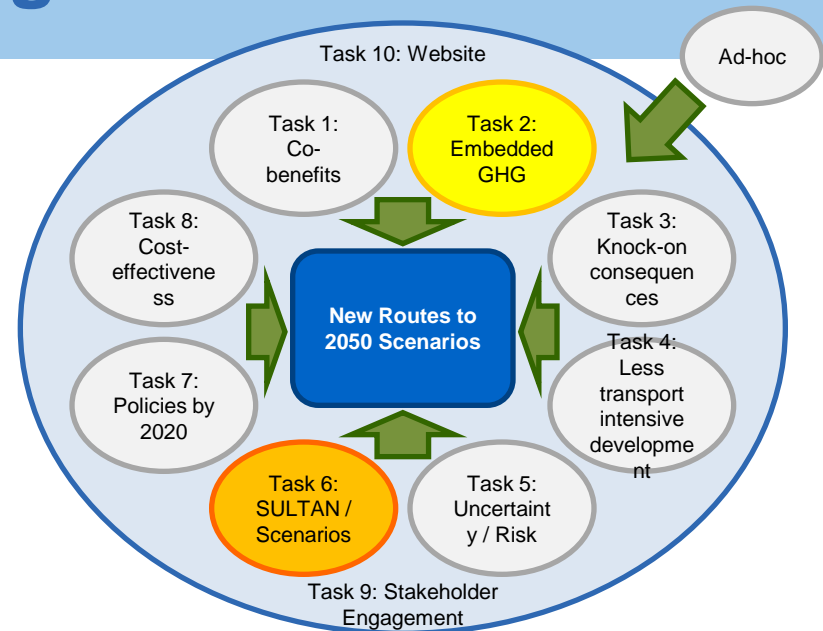
- Vehicle and infrastructure manufacture, end of life

## Interaction with SULTAN (Task 6)

- SULTAN can provide data on vehicle turnover & transport demand in each Scenario

## Contribution to Final Routes to 2050 Scenario Analysis

- Complement Scenario results with estimates of embedded GHGs



# How will the tasks link together?

## Task 3: Knock-on consequences

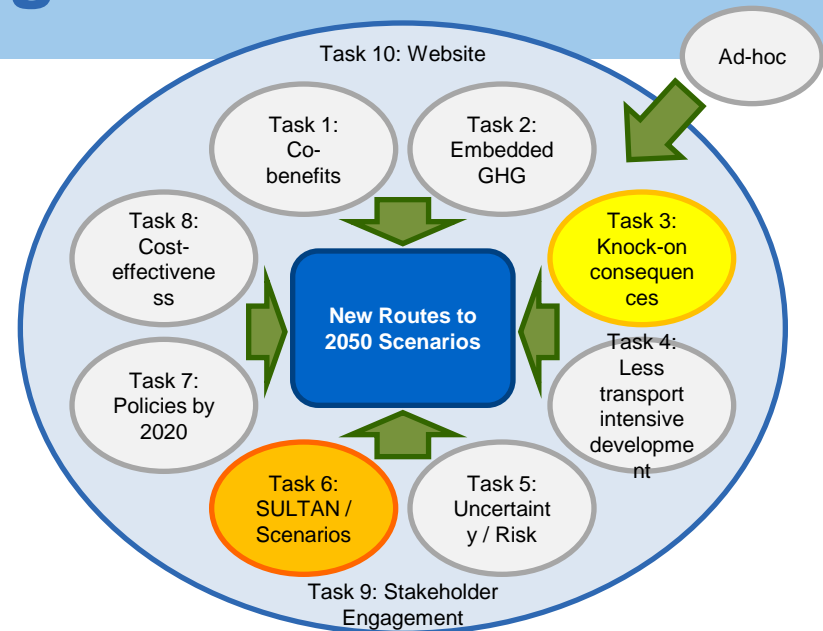
- Knock-on impacts of policies in road transport (speed reduction, fiscal measures, CO<sub>2</sub> limit legislation)

## Interaction with SULTAN (Task 6)

- Knock-on consequences will be incorporated into scenarios run in SULTAN

## Contribution to Final Routes to 2050 Scenario Analysis

- Hence, final Scenarios will incorporate knock-on consequences



# How will the tasks link together?

## Task 4: Less transport intensive development

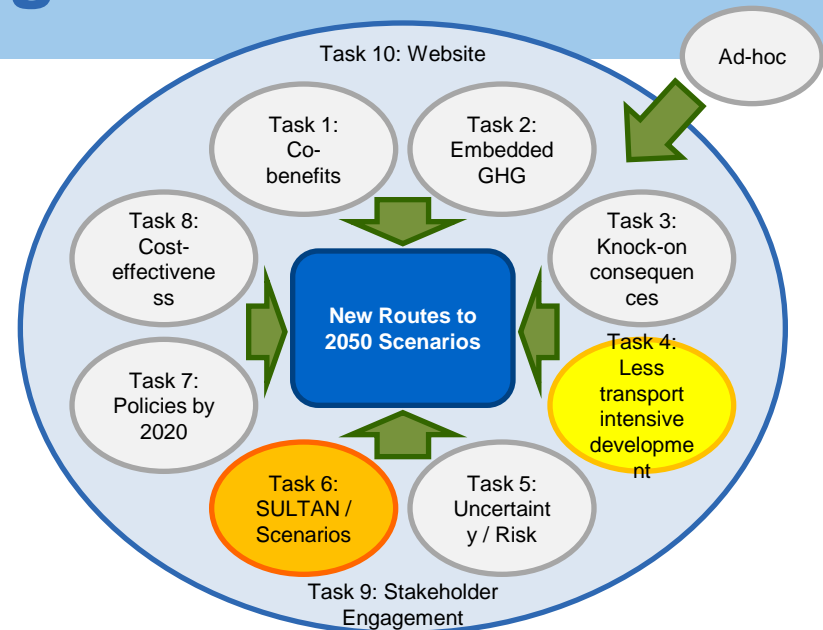
- Investigation of alternative development paths that could be less transport intensive

## Interaction with SULTAN (Task 6)

- Exploration of a new 'less transport intensive development' scenario to quantify the potential and risks

## Contribution to Final Routes to 2050 Scenario Analysis

- Hence, final suite of Scenarios will include this option



# How will the tasks link together?

## Task 5: Uncertainty / Risk

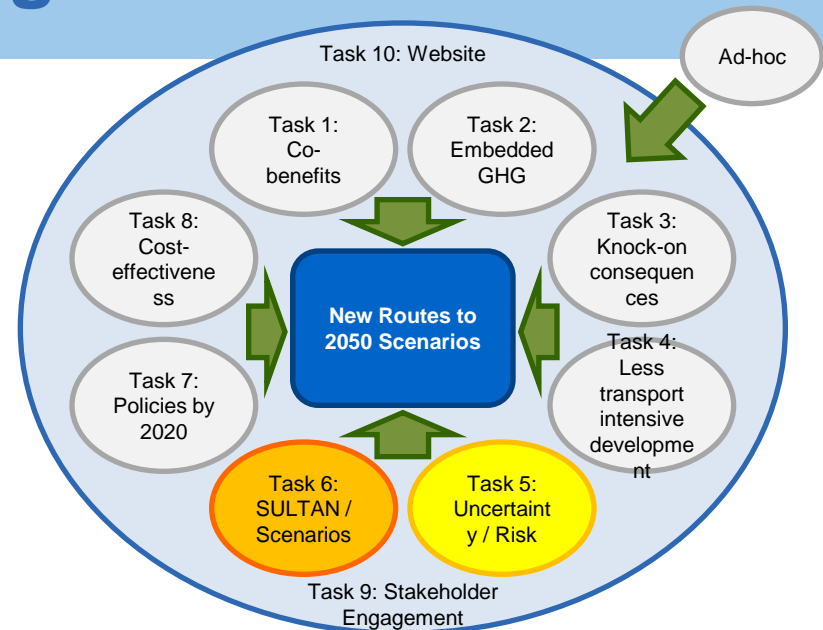
- Identifying key risks and uncertainties associated with policies and measures (biofuels, electrical / hydrogen power, economic instruments)

## Interaction with SULTAN (Task 6)

- New scenarios / variants that factor in these risks and uncertainties and explore the potential outcomes

## Contribution to Final Routes to 2050 Scenario Analysis

- Risks and uncertainties of key policies will be analysed





# How will the tasks link together?

## Task 7: Policies by 2020

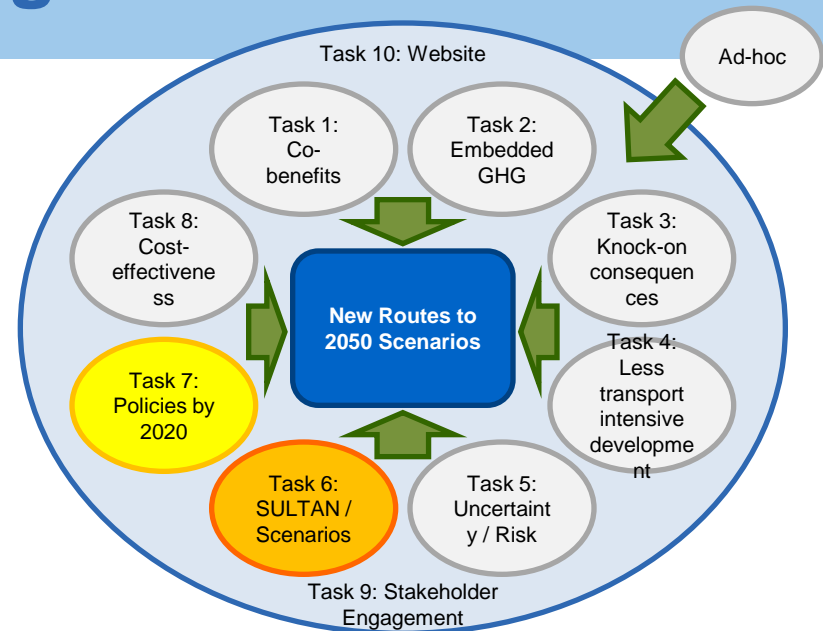
- Identifying measures to be implemented by 2020, explore emissions budgets

## Interaction with SULTAN (Task 6)

- SULTAN used to evaluate impacts of 2020 policies & potential budgets

## Contribution to Final Routes to 2050 Scenario Analysis

- Policies that need to be implemented early are identified
- Potential for emission budgets is explored



# How will the tasks link together?

## Task 8: Cost-effectiveness

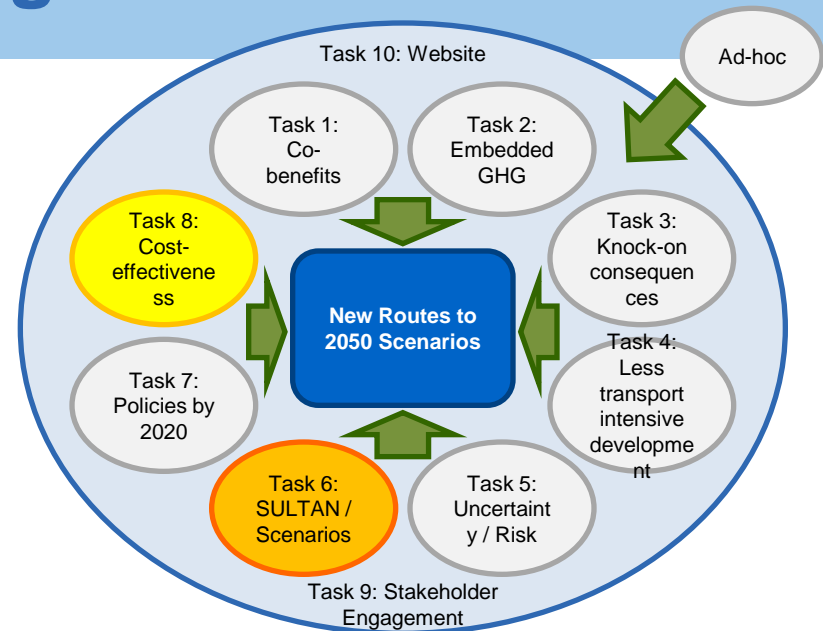
- Investigate the long term cost effectiveness of different policies and policy packages

## Interaction with SULTAN (Task 6)

- SULTAN gives some information on the costs of Policy Scenarios

## Contribution to Final Routes to 2050 Scenario Analysis

- Estimates of cost-effectiveness of policy instruments / Scenarios



# Next steps

## November 2011: Focus Group Meetings

- FG 3: Exploration of the potential for less transport-intensive paths to societal goals (draft paper for Task 4)
- FG 4: Co-benefits and cost effectiveness (draft papers for Tasks 1 and 8)

## February 2012: Final Stakeholder Conference

- Draft results from all Tasks
- Draft results from Illustrative Policy Scenarios

All papers, presentations and the SULTAN tool are published on the project website:

[www.EUTransportGHG2050.eu](http://www.EUTransportGHG2050.eu)



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# EU Transport GHG: Routes to 2050 II

**Thank you for your cooperation**

**Any questions?**

**Matthew.Morris@aeat.co.uk**

**29 June 2011, Diamant Conference Center, Brussels**

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