



Shift

Sustainable Horizons in FutureTransport

Shift will enable better policy making

- Define the role of transportation in the overall Nordic energy system.
- Lay out effective technology- and organisational innovations
- Identify near-term policy actions that will boost energy efficiency and reduce CO₂ emissions.

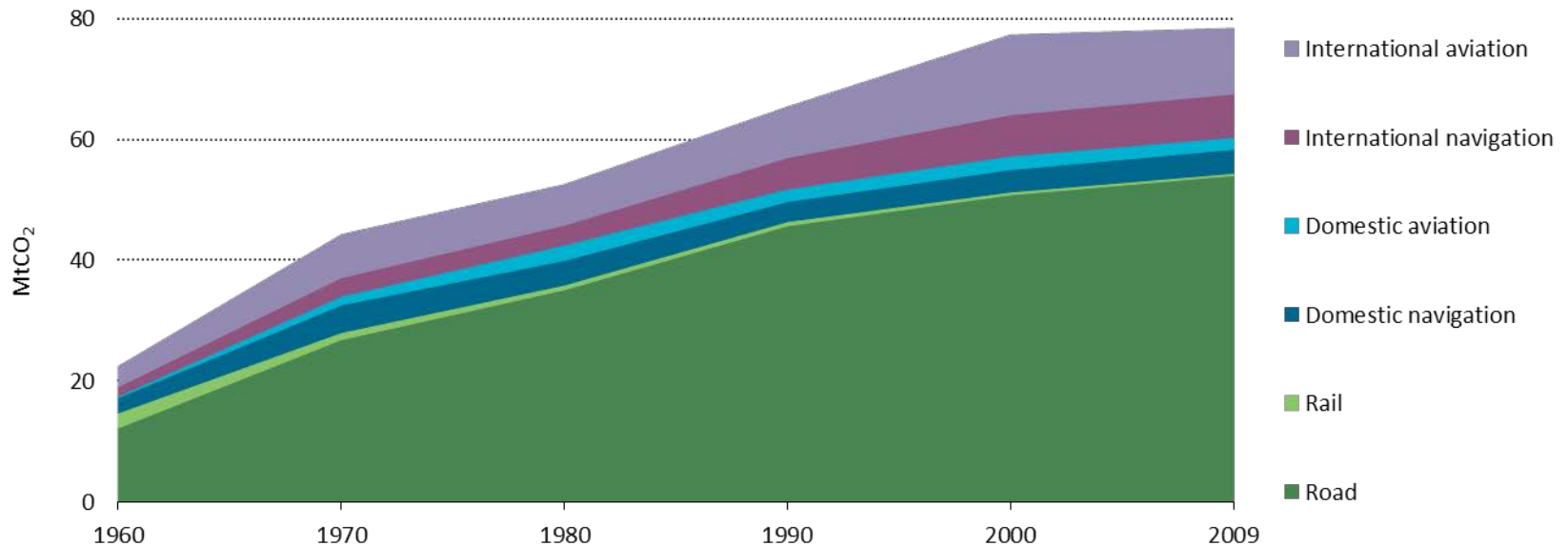
Three things that make Shift a very cool project

- Technology modelling fused with innovation- and behavioural research.
- Highly interesting and policy relevant case studies.
- Ambitious communication strategy an integral component of the project.

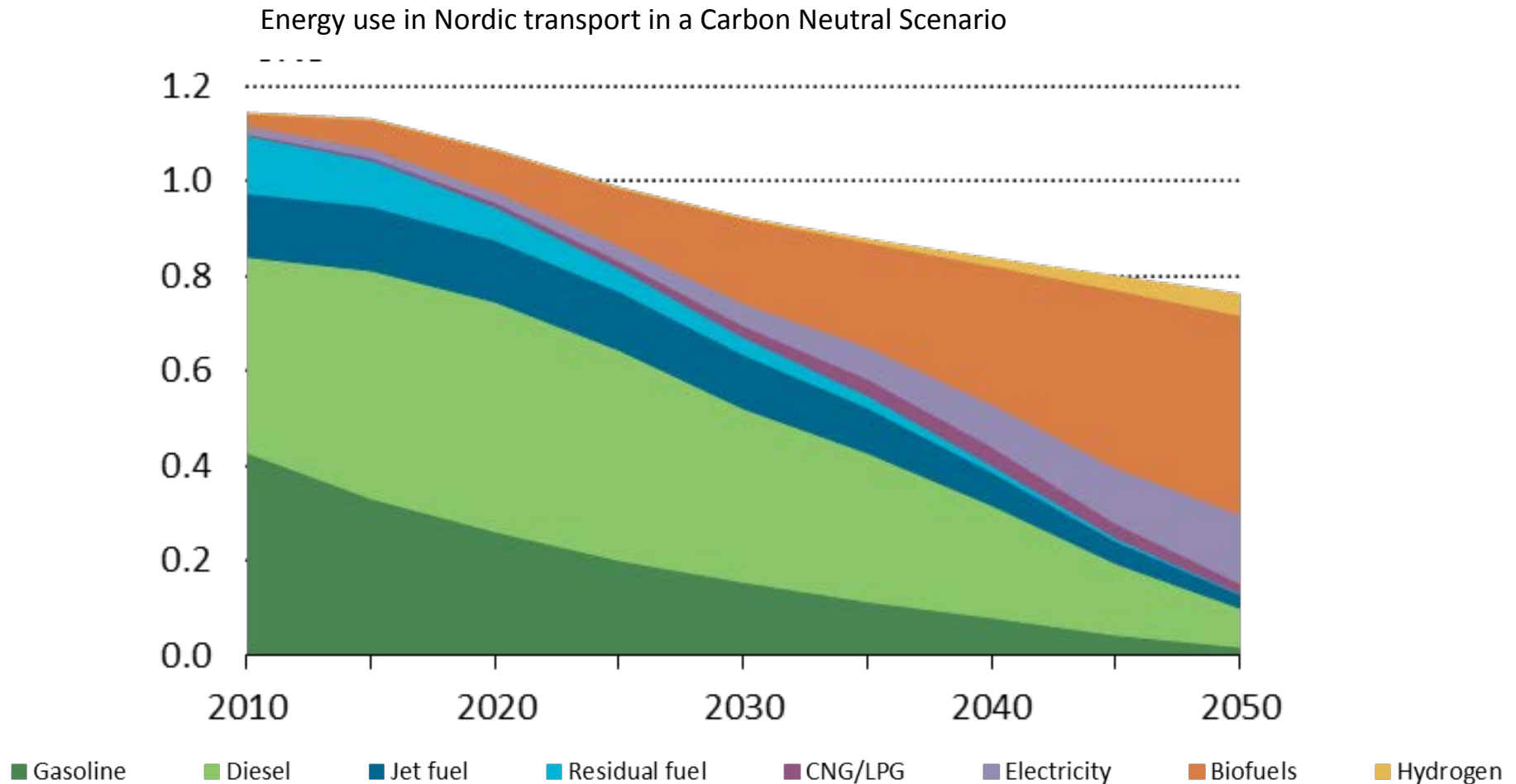
Why transport?



Energy use and CO₂ emissions from Nordic transport have increased 3.5 times since 1960.



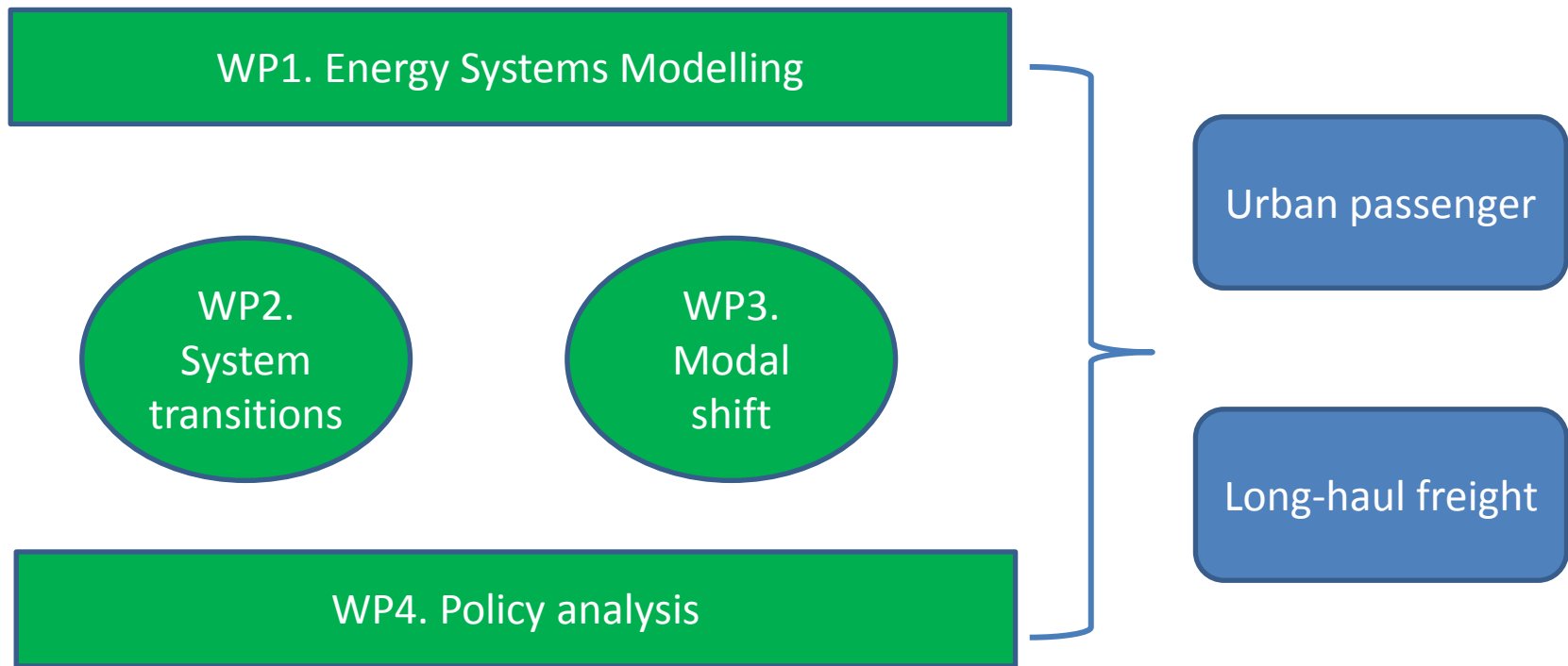
This contrasts sharply with a desired future



Reduced transport demand, intelligent modal shifts and better technology are all needed



Systems modelling ensures consistency;
focus areas provide Nordic relevance



Communication



Aims

- Influence policy
- Stimulate debate
- Contribute to neighbouring research

Means

- Visual identity
- Website
- Policy communication strategy
- Media strategy

Targets

- Policy makers
- Decision makers in industry
- Other researchers
- Public...

And now some details...

WP1. Energy Systems Modelling

WP2.
System
transitions

WP3.
Modal
shift

WP4. Policy analysis

Urban passenger

Long-haul freight



WP1 will strengthen energy systems modelling and scenario analysis

- Will provide backdrop and analytical framework to the entire project
- Better tools will give stronger systems analysis
- Transport modelling substantially improved

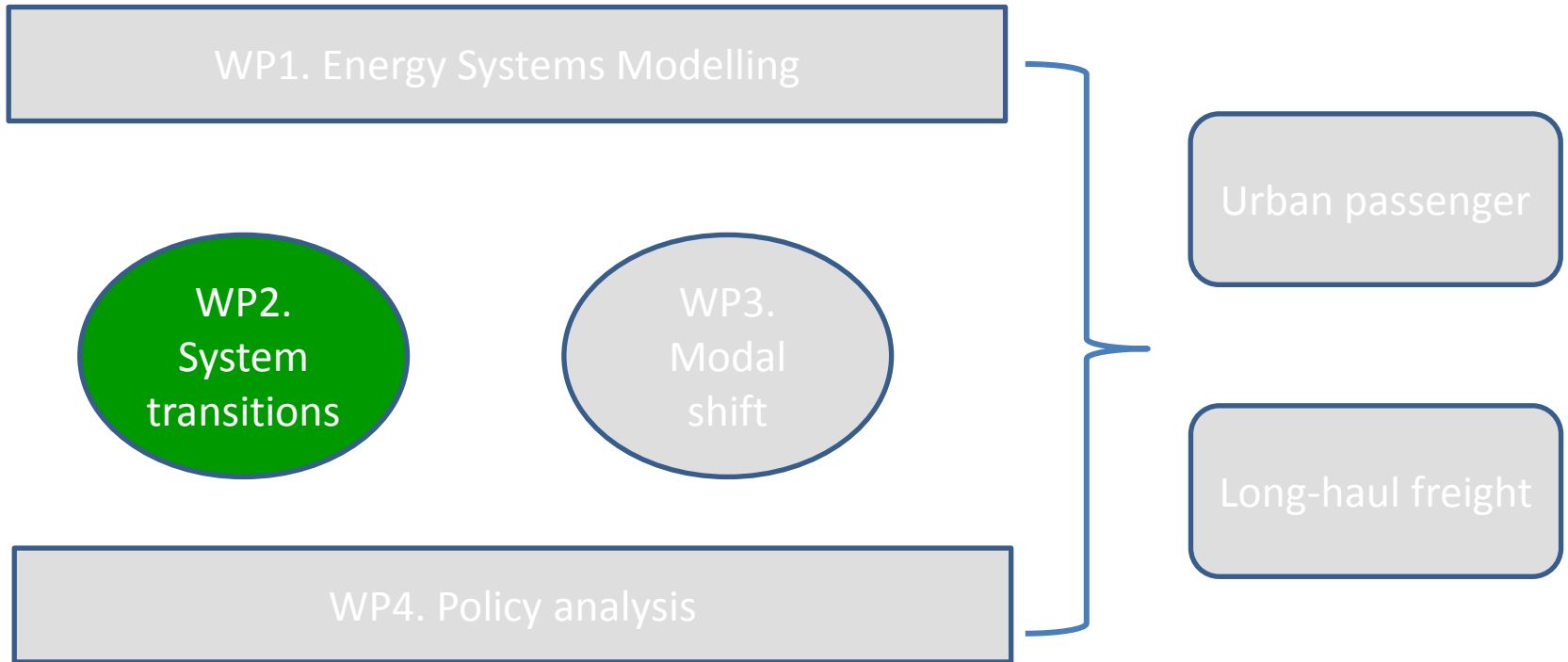
Lead: Kenneth Karlsson, DTU

Three tasks: context, model development and analysis

- Characterisation of a Nordic background energy scenario
- Development and integration of modal shift, technology innovation and travel behaviour in dynamic energy system models
- Exploration of selected hypotheses on the transport sector

Understanding interdependencies and “soft” issues are major contributions to state-of-the art

- A consistent Nordic energy system model with an advanced transport module increase the value for policy makers
 - Value of Nordic co-ordination
 - Optimise resource use and system flexibility
 - Impacts of new technology
- Enabling models to handle non-technical issues will add critical value
 - No large scenario models currently include these issues
 - Modal shift and demand changes key examples



WP2 focus on factors of development and diffusion of transport technologies and organisational innovation

Deliverables include comparative case studies that characterise:

- Dynamic interplay of actors and innovative activities in successive phases of system transformation
- Drivers and barriers of change
- Policy measures, tools and targets that can promote sustainable transport innovation

Lead: Steven Sarasini, Viktoria Swedish ICT

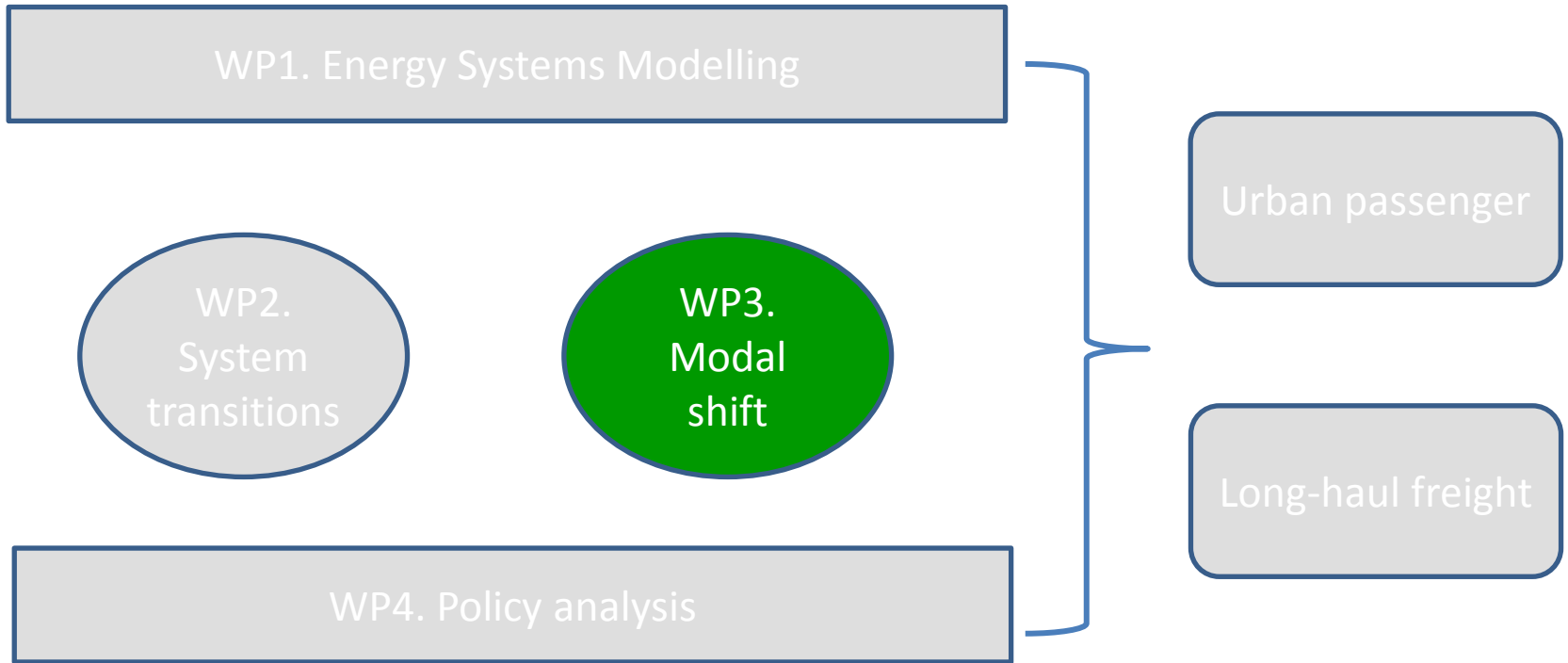
WP2 examines qualitative dimensions of technological systemic change

- Synergies and conflicts between technologies and fuels, both historically and presently
- The role of business model innovation in boosting the uptake of low-carbon technology
- The role of electrified highways in the Nordic transport system
- Organisational innovations that can assist in decarbonising long-haul freight

The role of public policy is a central dimension throughout the work.

WP2 will address three theoretical gaps

- The role of organisational innovations (e.g. new business models) as an enabler of technological change
- Synergies between technologies and organisational innovations
- The field of sustainability transitions lacks a 'practice perspective' that can elucidate effective forms of governance



WP3 examines drivers, barriers and effects of modal shifts

- Modal shifts and associated effects under different scenarios; passenger and freight transport
- Analysis of the institutional set up in the Nordic case countries that impact movement towards a sustainable modal shift.
- Assessment of the potential for non-polluting and non-transport substitutes for passenger transport.

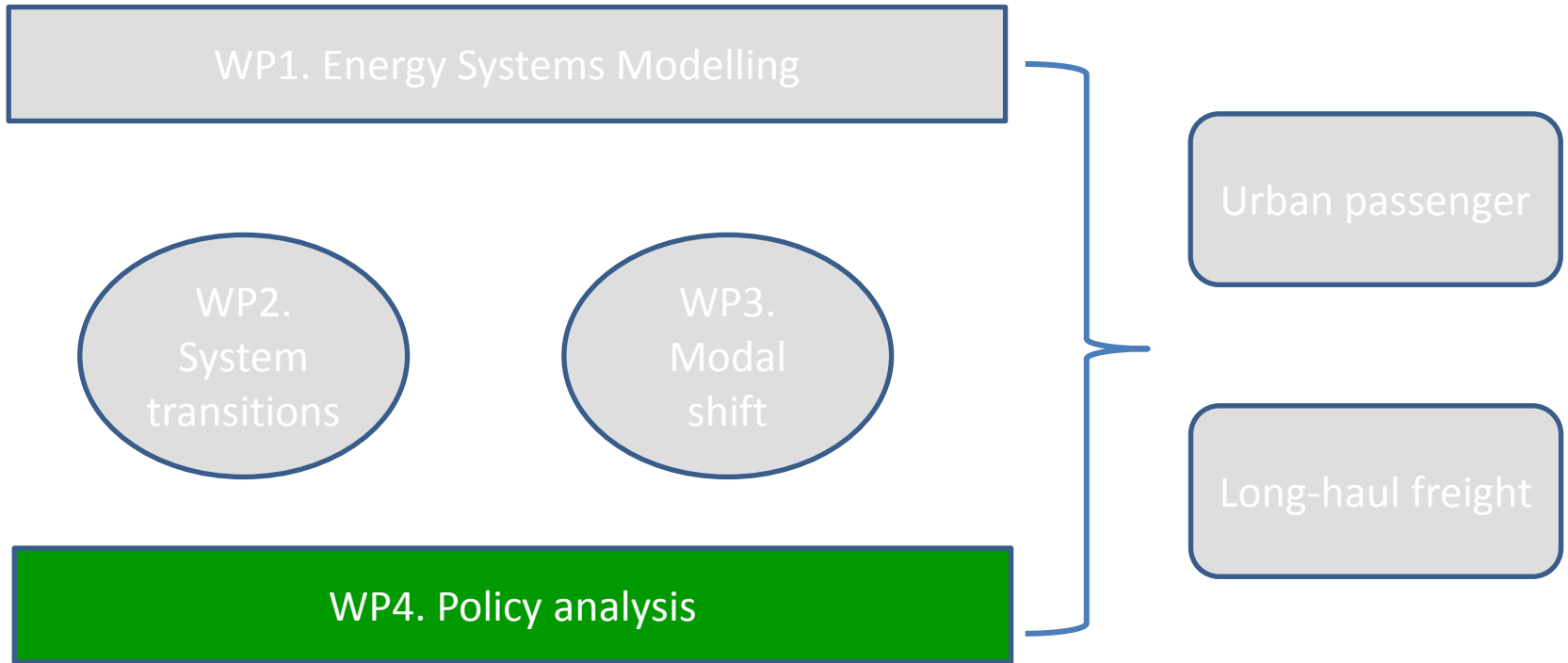
Lead: Tanu Priya Uteng (TOI)

WP3 applies methods from economic, technical and institutional analysis

- Novel combination of travel behaviour surveys with other datasets to plot the rationale for passenger modal choice.
- Statistical analysis of combinations of specific datasets with broader trends.
- Combine qualitative and quantitative methods to analyse the case for shared mobility.
- Detailed modelling of energy demand and emissions (CO₂, SO_x, NO_x and particulates) will complement WP1 analyses.

WP 3 addresses specific Nordic knowledge gaps and contributes to the general state-of-the art

- A coherent approach/methodology to assess future modal share across the Nordic region.
- Provide much needed input on modal shift to energy systems modeling
- Regional analysis and cross country institutional arrangements and barriers wrt future modal shifts.
- Assessing the viability of shared mobility as an alternative form of public transport in the Nordic countries.



WP4 will enable better future policies via analysis of past policies in three areas

- Passenger travel in Denmark, Norway and Sweden
- Urban transport in three Nordic cities
- Long-haul freight in Denmark and Sweden

WP4 will quantify aspects that are often left to “expert judgment”

- Qualitative analysis have dominated efforts to evaluate policy instrument design in applied energy research

Our contribution:

- Novel econometric and discrete choice modelling
- New, Nordic-specific data
- Bottom-up (microeconomic) approach on technology use
- Synthesizing the findings with ideas from game theory and behavioral economics

WP4 is econometrics at its best...

- Accurately identify the actual effects of existing policy instrument design in the Nordic region
- Testing the efficacy of alternative policy instrument design
- Energy and emissions associated with policy instrument options are key outputs

WP4 will provide other WPs with robust explanatory factors

- Give reasonable estimates of policy effects in the broader energy system (WP1)
- Identify statistically significant explanatory factors to the analysis of demand shifts carried out in WP2
- Identify statistically significant explanatory factors to the analysis of modal shifts and mobility solutions in WP3

Management

- Project Manager (Markus Wråke)
- Communications Manager (Helena Davidsson)
- Management Group (PM, CM, WP leads)
- Advisory Board

