



# How do we meet Ambitious Renewable Energy Targets in an Optimal Manner

**ETSAP 2010 Stockholm**  
**Thursday June 24 2010**

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## Overview



- Challenge
  - 16% Renewable Energy Penetration in Gross Final Energy Consumption
  - 10% Land Based Transport Energy from Renewable Sources
- Model
  - Irish TIMES Energy Systems Model
- Results
- Ongoing Work





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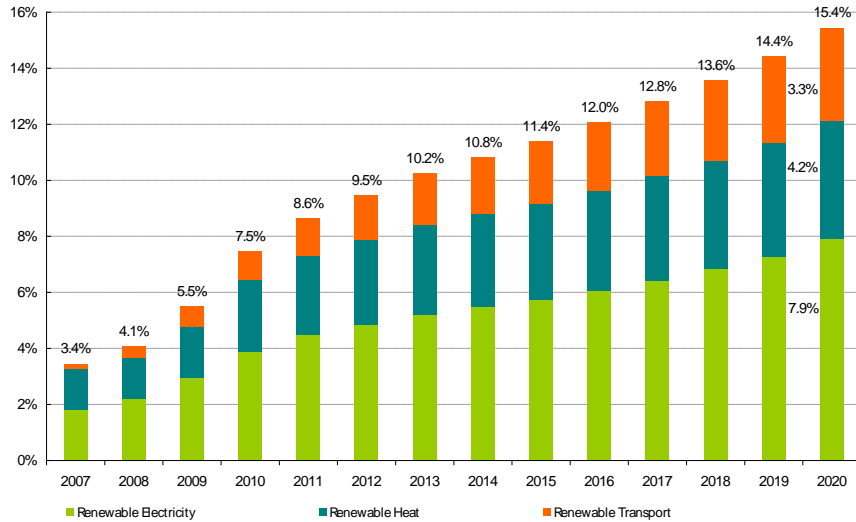


## Targets



- Directive 2009/28/EC
  - 20% share of energy from renewable sources in overall Community energy consumption by 2020 with indicative trajectory
    - Ireland's national target is set to 16% by 2020 (RES-16%)
  - 10% share of renewable energy in transport petrol and diesel consumption by 2020 (RES-T)
- Additional National Target
  - 12% of thermal energy from renewable sources (RES-H)
  - 40% electricity from renewable sources (RES-E)





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## Irish TIMES (2009 - 2011)



- Develop an energy system model for Ireland
- Build scenarios to inform energy and environmental policy
- Provide insights into technology options
- Irish TIMES Modelling team (4) @ UCC
- R. Tol (ESRI) providing service demand projections
- M. Gargiulo (e4sma) providing training and (invaluable) support
- A. Kanudia (KanORS) linking Irish TIMES with PET-IE



## PET-IE -> Irish TIMES



- Wanted to avoid 'multiple' TIMES models for Ireland
- New approach adopted here to ensure
  - ongoing consistency between PET-IE & Irish TIMES
  - as Irish TIMES improves, this feeds back to PET-IE
- Involves PET-IE 'dbase' only extraction from PET
- Irish TIMES is a fully working TIMES model
- Irish TIMES cannot change calibrated base year data





## PET -> 'Country' TIMES



- “Extract” country model from PET model
  - a single region is delivered (e.g. Ireland) via VEDA-FE browse database, to country TIMES modelling team
  - this includes data to simulate the Reference case trade environment of the multi-region PET
- Feed-back from country TIMES modelling team
  - periodically information about new inputs, structure updates and assumptions
  - used by the PET core team, to improve the single country region



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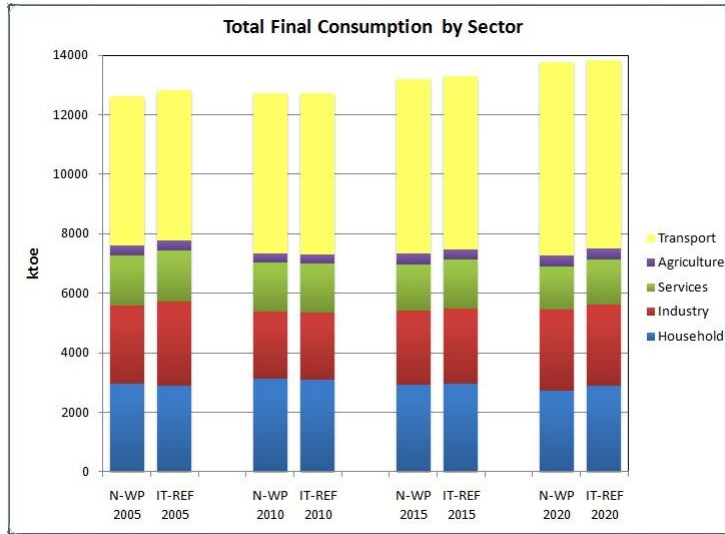


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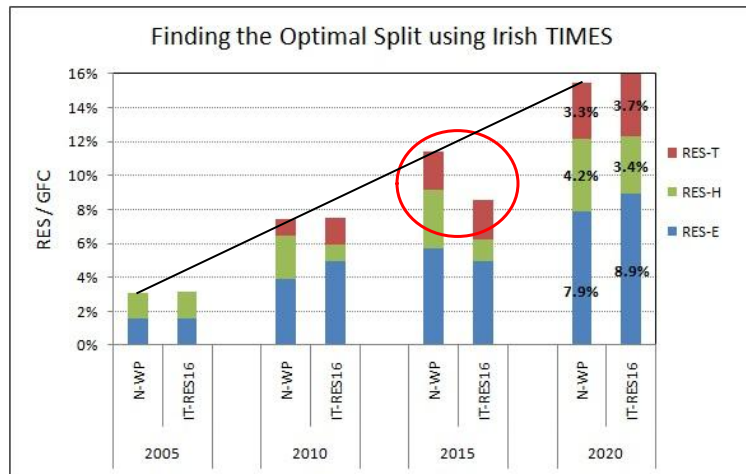




# Reference Energy System

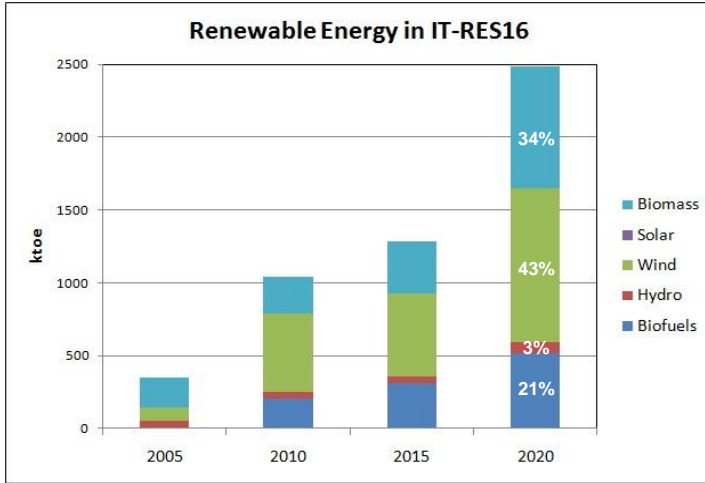


# Main Results





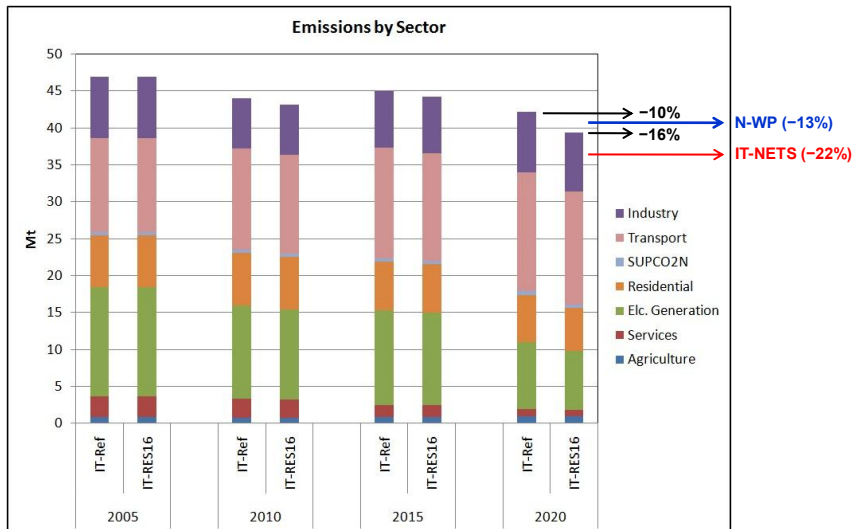
# Shares of Renewable Energy



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# Impact on Emissions

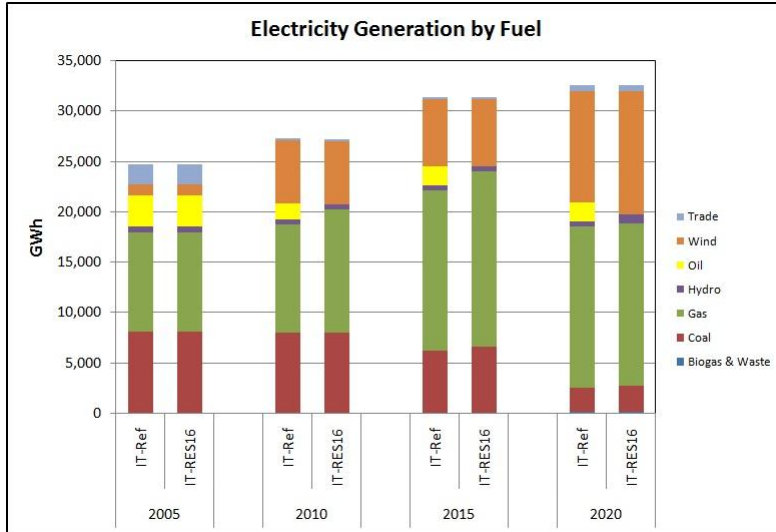


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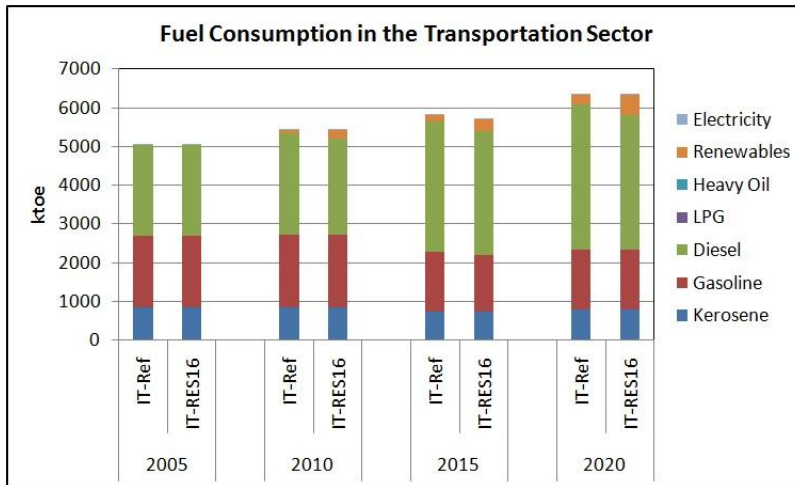
# Electricity Generation by Fuel



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# Transportation Sector



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## Irish TIMES Ongoing Work



- January – June 2010
  - EN1 *16% RES and 10% RES-T by 2020*
  - EM1 *20% decrease in Non-ETS GHG 2020*
  - Energy service demand to 2050
- July – December 2010
  - EM2 *GHG 80% decrease by 2050*
  - EN2 *Energy Security in 2050*
  - Workshop Cork November 15 2010



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“IRISHTIMES” has it right!



IRISHTIMES.com

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The Irish Times - Tuesday, November 3, 2009

### Cork enters 'Lonely Planet' guide as top 10 place to visit



OLIVIA KELLEHER

CORK HAS been listed alongside cities in the US, Canada and Italy in a new Lonely Planet travel guide for the top places to visit in 2010.

The Best in Travel 2010 published this week is the travel company's fifth in its annual collection of the best places to go and best things to do in the year ahead.

Cork was listed as a "top city" alongside Abu Dhabi, Charleston (South Carolina, USA), Cuenca (Ecuador), Istanbul, Kyoto, Lecce in Italy, Santiago, Singapore and Vancouver. The guide said Cork was now "at the top of its game: sophisticated, vibrant and diverse".

Tourism leaders in Cork have declared the inclusion of the city as being "a major boost", particularly in recessionary times. Cork is the only Irish listing in the Lonely Planet for 2010.

The news was welcomed on the People's Republic



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