Out of the Red, Towards the Green

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Purpose

- Review the economy
- Look at the future
- Highlight sustainable opportunities
- Point the way towards a greener future

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Part One: **The Economy**

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In the Red

- Banking system in ruins - €80 bn bill
- Public finances in crisis - €25 bn budget deficit
- Social partnership in tatters - unions in revolt
- 400,000 unemployed; 100,000 to emigrate
- Bankruptcies, redundancies, emigration

Hanging On

Totally dependent on ECB and German Banks:

€80 bn to bail out the banks
€80 bn to fund budget deficits 2010-2014
€80 bn to fund the national debt

€240 bn just to keep going

Hang Together

- Dependent on economic recovery elsewhere
- We need to hang together (or we'll hang separately)
- We need a new vision
- The old one has faded
- We need to make a new start

End of an Era

- The Whitaker development model is now outmoded. It was dependent on:
    - low taxes and low wages
    - then, low taxes and high productivity
    - Foreign Direct Investment and exports
    - and industrial relations peace and policy consistency

Lack of Indigenous Industries

- Strategic weakness was the dependency on FDI
- And failure to build up indigenous industries
- Except grass based exports – which are now €8 bn pa
- Failure to control costs - loss of competitiveness
- We need a Whitaker Two

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Part Two: **The Future**

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Hope Ahead

- A profound transformation is taking place globally
- Driven by need to prevent global warming
- Keep the rise in temperature below 2° by 2050
- End of hydrocarbons as energy sources
- Shift from the brown to a green economy is under way

A Big Vision

- Be in the vanguard of the change
- Be a global leader in chosen fields
- Focus on three or four big ones
- Based on understanding of what has to be done
- Let’s be Green and Global

What has to be done?

- Here's a simple formula - from one who knows:
  - Nobuo Tanaka, Director General of the International Energy Agency

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Three Steps to a Green Future

1. Improve energy efficiency

2. Switch power generation from fossil fuels to renewables

3. Electrify all surface transport

Pathways

- This formula provides the pathway to the future
- Tells us what the future will be like
- **First step** in planning is to know where we are going
- The **next step** is to work out how to get there
- This is called “backcasting” – as opposed to forecasting

Vision of 2050

- All existing buildings are retrofitted to A1 standard
- All new buildings are energy positive
- All appliances, machines, systems are energy efficient
- All power grids are smart
- All fossil fuelled plants replaced by renewables
- All petrol driven cars replaced by electric vehicles

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The End of Oil

- The end of hydrocarbons as the source of energy
- No more oil – or coal or gas
- The beginning of a new era, based on new renewable technologies
- An era of opportunities – sustainable opportunities

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Part Three: **Sustainable Opportunities**

Focus

- Let's focus on what we **must** do
  - Like retrofitting and decarbonising powergen
- But also on what we **could** do – and use for exports
  - Like energy management systems
  - And Green Energy exports

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The Difference

- The difference between what we have to do
  - And what we could do
- It's the difference between meeting EU targets
  - And achieving a global presence in the New Economy
- The difference will be the measure of success or failure

Two Basic Principles

1. Concentrate on comparative advantages

2. Maximise value added

- Bear these in mind when analysing what we **must** do and what we **could** do

The Story So Far

- So far we are focussed on targets
  - We are still thinking Old Economy
- Let's use what we must do
  - As the basis for what we could do
- The difference will launch Whitaker II

What we must do: the agenda

- Retrofit existing homes and buildings
- Replace the energy inefficient with the efficient
- Build a RE power generation system
- Create an electric transport system
- Build the supporting infrastructure for all of above
- Develop the supply chains and supporting services

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What we must do: Retrofitting

- 1.2 m domestic dwellings to be upgraded
- 1 m industrial, commercial and public buildings
- All to be retrofitted within 40 years
- €5bn - €10 bn expenditure on homes
- €100 bn + expenditure on buildings

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Retrofitting: Costs and Benefits

- Cost of around €3 bn annually
- Benefits include jobs and increased tax income
- Plus reduced expenditure on dole, health, fuel poverty
- Savings on imported oil and gas (total € 5 bn pa)
- Stimulus to the economy via import substitution

Retrofitting: Employment

- Direct : on site (supervisors, craftspeople)
- Direct : off- site support services (office etc)
- Indirect : supply chain (parts, materials etc)
- Tertiary: servicing the direct/indirect jobs
- “There is a new building industry to be created”

What we must do: Efficiency

- Development holistic energy management systems
- Smart appliances, machines, buildings, processes
- Real time management of energy supply and demand
  - Based on smart grids
- Closed loop manufacturing – no waste whatsoever
- A high energy density economy

Efficiency: A starting Point

- Energy smart communities
- Aim of zero carbon communities – distributed power gen
  - Cloughjordan, Dublin, Roscommon, Galway
- Social mobilisation – co-ops, communal networks
- Meaningful, relevant and achievable goals
- Bottom up approach

What we must do: Power Gen

- By 2050 peak demand at 7 – 10 GW
- Say 5 – 7 GW comes from wind
- Balance from marine, solar, bio and geothermal
- Capital investment of €25 bn - €30 bn
- Plus new grid

Power Gen: Plans in place

- National objective is 40% RE by 2020
- ESB plan to be zero carbon emissions in 2035
- Eirgrid planning grid upgrade for 2025
- Offshore grid with Scotland and NI
- Involvement in Northern Seas offshore grid

An Aside – What are Renewables?

- Wind : Onshore and Offshore
- Marine : Wave, tidal, current
- Solar : Thermal and photovoltaic
- Bio: Bio-mass, bio-fuels, bio-energy
- Geothermal: Heat, power
- Hydro: Dam, run of river

Power Gen: Road Ahead

- For Ireland, wind is the big RE resource
- Plus wave, tidal and current - no hydro left
- Solar mainly for distributed generation
- Same for bio-energy like biomass
- Focus first on onshore and then on offshore wind

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Power Gen: Key to Supply Chain

- Guaranteed demand will create supply chain
- Guaranteed demand depends on price support systems
- Hence, essential to introduce stable REFITs
- This will secure project financing

Power Gen: Employment

- RD&D and design
- Project development
- Manufacturing – turbines, towers, parts
- Assembly and transport (road and sea)
- Installation and cabling
- Operations and maintenance
- Services (IT, HR, finance, legal, engineering)

What we must do: Transport

- National aim is 10% EV in car fleet by 2020
- ESB is building the infrastructure
- We have to get to 50% by 2035 and 100% by 2050
- Also have to electrify the railways and replace buses
- Build new public transport systems – metros etc

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Part Four: **Towards a Greener Future**

What we could do – if we tried

1. Energy efficiency
2. Energy exports
3. Transport

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What we could do: Efficiency

- Fill in the supply chain – maximise value added
- Specialise in IT applications and sell the know-how
- Likewise sell energy management know-how
- Provide educational and training services
- Establish a Green Financial Services Centre

What we could do: Power Gen

- Export wind generated electricity to EU via Supergrid
- There will be a Green Energy gap to be filled
- And a single European Electricity Market
- Plus a Mega Grid connecting all EU markets with
- Norse hydro, Northern Seas wind and Med solar

Power Gen: The 50-50 Vision

- Export wind generated electricity to EU
- There will be a Green Energy gap to be filled
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- Norse hydro, Northern Seas wind and Med solar

What we could do: Transport

- Capture some of the supply chain
  - Parts, batteries, IT systems - even cars, trucks or buses
- Export the transport system know-how
- Integrate EV system with the smart grid - storage
- Sell the know-how

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What we could do: Services

- Finance – funding
- Legal, insurance, back -office
- Energy Trading
- Carbon Trading
- Product innovation
- R&D, RD&D
- Systems design, IT platforms
- Architectural design – sustainable communities
- Sustainable agriculture
- Human resource training

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Re-organised Public Service

- No ambition unless the vision is internalised
- 1957 – 100,000 emigrants – Whitaker reacted
- 2010 – 100,000 emigrants – who will react?
- A new Department of Sustainable Development
- A dedicated Sustainable Development Authority

A Business Plan for Ireland

- Need all this captured in a Business Plan for Ireland
  - Approved by Government
  - Endorsed by the Oireachtas
- A clear statement of ambition and mission
  - With timelines and milestones
  - And buy-in across the board

Sir Robert Kane

- Methodology: Identify and quantify industrial resources
- What would Kane say about our wind resources?
- Reply: “Wind is the new Grass”
- Kane provided a combination of vision and technology
- Best form of flattery is imitation
- Let’s do the same – with urgency, impatience, belief, energy

The Big Ones – the BHAGs

Big hairy aggressive goals - for Ireland:

- Green Energy Exporter – the biggest in Europe
- Green Financial Services – the best in the market
- Green IT – the most innovative in in the world
- Green Appliances – the smartest of them all

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Build on the Success Stories

- The ESB e-car
- Glen Dimplex
- Open Hydro
- Wavebob
- Mainstream Renewable Power – UK Offshore
- NTR Solar, USA

The Message

- Let’s get out of the Red
- And march towards the Green
- LET’S GO GREEN AND GLOBAL
- Ach tabhair aire - Ní neart gur cur le chéile

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Go raibh maith agaibh

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