



ESB Novus Modus Investment Fund

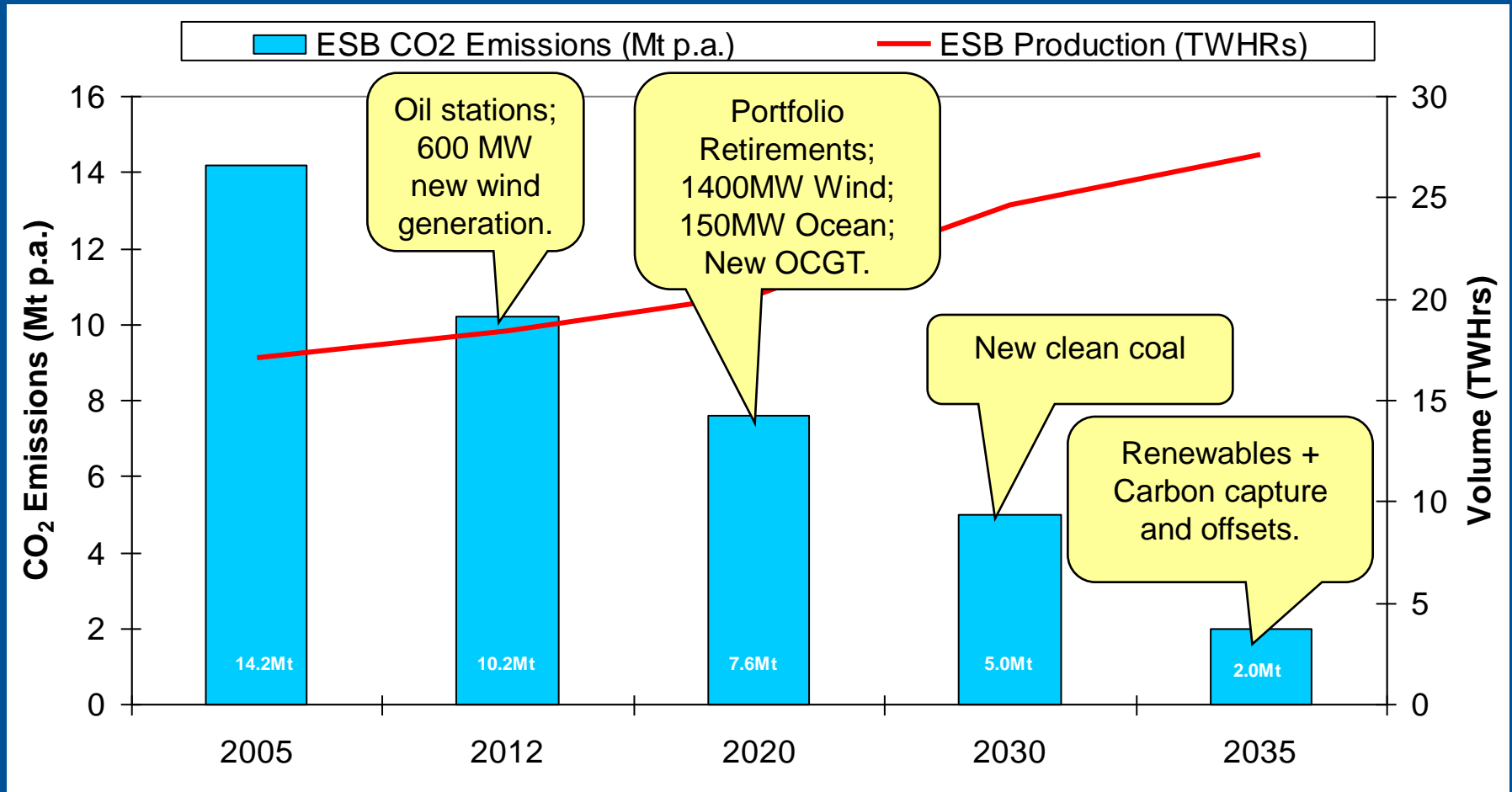


Novus Modus

ESB Strategic Framework to 2020

- New era for energy sector and ESB
- Ireland's leading renewable company with carbon commitment to net zero
- Continued focus on Networks, domestic Generation and Supply and International
- Increase in International market to support company growth
- Capital investment programme of €22 Billion
- Competitive Smart-Tech Utility

ESB CO₂ Emissions Trajectory



**Residual in 2035 offset with allowed domestic/international measures
Market share maintained ~40%**



ESB: A Smart-Tech Utility

Over 80 years of excellence in engineering, finance and customer service

- 8,000 employees
- Over €3.3bn turnover
- €6.5bn asset value



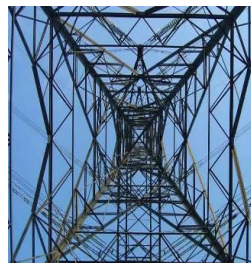
- €22bn investment programme
- 30% CO₂ Reduction by 2012
- 50% carbon reduction by 2020

Powergen + Wind



- Portfolio of 19 plants
- 4.9 GW capacity in Ireland
- 600 MW new wind portfolio under development

Networks



- Regulated Networks infrastructure, RAB model, efficiencies
- All electricity customers
- Smart networks, smart meters,

Customer Supply



- 2m customers
- Competition

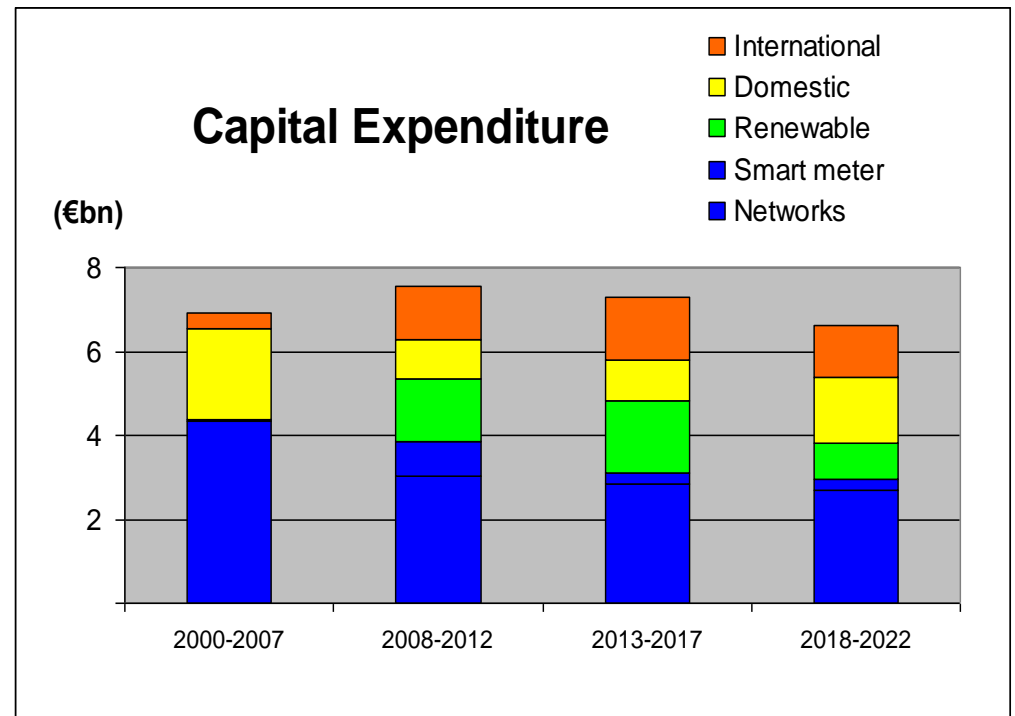
International



- Global engineering consulting business
- Portfolio of 5 plants
- 2.7 GW capacity

ESB Capital Investment

- €22 billion to 2022
- Renewables - €4 billion
- Networks - €10.5 billion subject to CER controls
- Domestic - €3.5 billion
- International - €4 billion



Investment of €22 Billion

***A new fund for
renewable and
cleantech sectors***

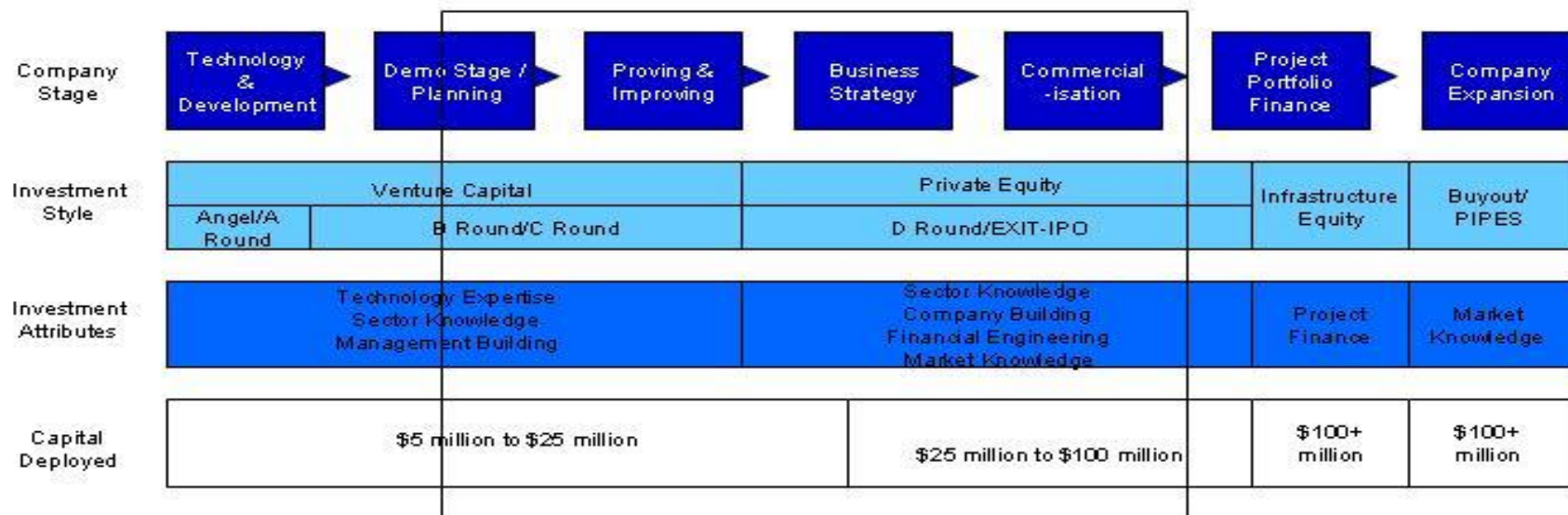
- Owned by ESB
- €200 million investment fund
- Investing equity across the renewable energy/cleantech sectors
- Operating out of Dublin and London
- Investing between €5m and €20m
- Providing expert skills and technological know how to investment partners

Investment Criteria

Investment type	<ul style="list-style-type: none">• Business development, joint venture, greenfield business launches• Expansion stage financing: funding new product introductions, capital asset purchases and add-on acquisitions
Investment size and corporate governance	<ul style="list-style-type: none">• Typical investment size of €5-10 million, not >€20m• Primarily equity investment• Minority positions coupled with minority shareholder protection rights / shared control• Will seek board representation, shareholder information rights
Investment horizon and target returns	<ul style="list-style-type: none">• Risk-adjusted scale of returns• Diverse investment portfolio to spread risk• Investment period and realisation period

Investment Stage

ESB NOVUS MODUS



Novus Modus Investments: Ireland and International

Investment Areas

Proven & proving technologies

Companies/projects

- ***large addressable markets***
- ***niche exploiter***

Clear funding milestones

Renewable Power and Heat Plants

Wave, tidal, solar, hydro, geothermal, biomass

Renewable Technology

Biomass, wave, tidal, solar, wind, fermentation, gasification, pyrolysis

Renewable Logistics

Service companies, fuel processors, fuel transporters, recyclers

Low Carbon

Waste, CHP, district heating, energy efficiency, energy storage

Clean Transport

Biofuels and transport efficiency

- Wind
 - Improvements in technologies – installation and operation
 - Micro-wind
- Marine
 - Focus on Tidal Stream and Wave
 - Develop technologies which are capable of production and deployment at commercial scales
 - Seek solutions to installation and deployment risks
- Solar
 - Develop technologies to reduce cost of production of power and / or improve production processes

- Smart Grid
 - Develop technologies to facilitate efficient demand management, transmission, access and storage
- Buildings
 - Develop technologies for management of consumption (light, heat, water) and improved performance (insulation, glazing)
- Lighting
 - Technologies for domestic, commercial and public lighting
 - Focus on efficient lighting sources, intelligent activation and metering

- Biomass
 - Crop / Fuel supply and distribution
 - Operation of small/medium-scale plants (general and District Heating)
 - Develop and deploy technologies which are more efficient
- Biogas
 - Fuel supply and distribution
 - Develop and deploy technologies reducing cost of gas production
- Microgeneration
 - Develop and deploy technologies – ability to roll out on large scale

- Electric
 - Development of technologies around batteries and grid management
 - Potential large-scale opportunities for distribution network rollout
 - I.T. and charging
- Fuel Cells
 - Development of technologies from micro-electronics through to transport

Investment made: Vantage Point CleanTech II

- **Founded in 1996 and evolved from IT / Bio-energy venture fund**
 - >\$4 billion invested in all funds
- **Cleantech II Fund**
 - Fund size \$500m
 - Novus Modus investment committed €15m



BrightSourceEnergy™



SuperBulbs

better place



Investment made: Nualight

- €2.5m invested in Nualight (€3.3m funding round)
 - Irish energy efficiency lighting – savings of up to 80% of supermarkets energy
 - Enable Nualight to develop further products and grow its company
 - From 25 staff today to 80
 - To successful international company
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Nualight

- Cork based leader in refrigerated display illumination
- LED lighting displays fitted into freezer and chiller cabinets
- Customer proposition with better quality illumination, lower energy consumption, lower maintenance costs, longer life and improved reliability



Current Investment Opportunities

- **Almost 40 potential investments considered**
 - **Covering a wide range of sectors**
 - Marine Energy – technologies and projects
 - Biomass – technologies and projects
 - Lighting / Efficiency – Devices and Technologies
 - Storage Technologies
 - Generation technologies
- **Opportunities are subject to a structured review process ensuring that resources are not deployed unless match return / risk criteria**

Risk and Allocation of Capital

Utility vs Venture

Risk / Reward

- Typical Utility Returns 5-7%
 - Long term, understood risk
- VC returns 20-30% + gain potential
 - Expect higher Fund returns for higher risk profile
 - Technology / markets / new companies
- Positions ESB for future technology and innovation

Funding Cleantech Investments



***Capital and
Partnering
opportunities***

- CleanTech sector is NEW
- Not IT/ICT .com sector....but good opportunities
- Energy markets are long term
- Very large capital requirements to commercialisation
 - Partnering
 - Requirement for bank project finance
 - Requirement for Government support

Funding CleanTech Investments

- Energy stimulus packages
- Drivers – sustainability, cost, security of supply
- Venture Funds investor commitments
- *Funding markets difficult – manage cash burn carefully*
- Realisation that ‘clean tech’ is a sector with ‘trillion dollar’ sub-markets
- Even the billion dollar funds are partnering & seeking Utility link-ups
- ‘Because of its scale, clean tech is different’

ESB's Added Value

- Engineering expertise – ESB and ESBI
- Understanding energy markets
- Competing and investing internationally
- Strong management disciplines
- Utility support and long term commitment

Novus Modus Summary

- ESB's Venture Capital Investment Fund of €200m
- Position ESB ahead of the curve
 - Future strategic options / support existing business
 - Commercial return targets
 - Part of progressive, sustainable brand; developing know-how
- Consistent with strategies of EU utilities
 - Meeting environmental targets
 - Business risk mitigation
 - Investing in Innovation