How are LTES used to develop LT Low Emission Development Strategies

PORTUGAL
Carbon Neutrality Roadmap

2030 2040 2050

Leader ➔ ENVIRONMENT AGENCY

Tools ➔ MARKAL/TIMES (CONSULTANTS)

Criteria ➔ OPTIMAL COST-EFFECTIVE PATH

Conditions ➔ NO RISK AVERSION, UNLIMITED INVEST.

Production ➔ RENEWABLE ELECTRICITY + BIOMASS

Transformation ➔ -

End uses ➔ ELECTRICITY

Lost Assets ➔ SEVERE

Security ➔ LOW

Neutrality ➔ 90%
National Climate - Energy Plan

Leader: ENERGY DIRECTORATE-GENERAL

Tools: LEAP, STOCK ROTATION (IN-HOUSE TEAM)

Criteria: SELECTED VALUE CHAINS

Conditions: IMPROVE SECURITY & VALUE ADDED

Production: RENEWABLE ELECTRICITY + BIOMASS

Transformation: STORAGE

End uses: ELECTRICITY + GAS

2030

2040

2050

Lost Assets: MODERATE

Security: MEDIUM

Neutrality: 75%?!!

December 2019
National Hydrogen Strategy

Leader: ENERGY DIRECTORATE-GENERAL

Tools: LEAP, STOCK ROTATION (IN-HOUSE TEAM)

Criteria: SELECTED VALUE CHAINS

Conditions: MAXIMIZE SECURITY & VALUE ADDED

Production: RENEWABLE ELECTRICITY + BIOMASS

Transformation: STORAGE, HYDROGEN, RFNBOs, CCU

End uses: ELECTRICITY + FUELS

Lost Assets: MINIMAL

Security: HIGH

Neutrality: 99%

2030  2040  2050

SCOPE

CHEMICAL FEEDSTOCKS

INTERN’L AVIATION

INTERN’L NAVIGATION

DOMESTIC AVIATION

DOMESTIC NAVIGATION

ROAD AND RAIL

INDUSTRY

RESIDENCES

SERVICES

CONSTRUCTION

AGRICULTURE ETC

ENERGY PRODUCTION

ANIMAL PRODUCTION

VEGETAL PRODUCTION

WASTES

LAND USE

CARBON BIO-SINKS

CARBON GEO-SINKS

August 2020
In less than one year, ‘ 2 ½ ’ LT-LEDS with quite different energy system views

Integrated Climate – Energy planning is a concept that makes sense...

...but the implementation requires careful communication & balanced dialogues

Governments / Environment Agencies / Energy Agencies / LTES modelers