

# How ambitious can the Israeli Green Deal be?



Video presentation

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# National Development Targets of OECD countries submitted to UNFCCC

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**Portugal** GHG emissions by 2050: 85%, compared to 2005, and ensuring an agricultural and forestry carbon sequestration

**Norway** Net 0 by 2030

**Sweden** Net 0 by 2045 with a 15% offset limit

**Denmark** Net 0 GHG by 2050

**UK** Net 0 GHG by 2050

**France** 75% reduction of GHG emissions by 2050, compared to 1990, with detailed sector targets.  
-the goal to net 0 is under consolidation

**Germany** 80% - 95% GHG emissions reduction by 2050, compared to 1990,

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**EU Green Deal** net zero GHG emissions by 2050.

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**Japan**, 2050 target (80% reduction from current levels)

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**Canada** 80% below 2005 levels

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...and i should care,  
why?

Israeli policy makers question the need for active climate policy:

- Israel contributes only about 0.5 percent to global emissions of greenhouse gases (GHGs).
- From coal to natural gas
- Solar is the main renewable energy (RE) with high intermittency

What target is not too expensive?

# Research Structure

Min of Energy  
Min of Transport  
Planning Administration  
Min of Economy and Industry

Update of  
data for Israel

From  
MESSAGEix  
global to  
MESSAGEix-IL

Link to  
MACRO

Scenarios for  
energy related  
GHG  
emission  
reduction

Baseline scenarios

Ambitious policy scenario

Ambitious policy scenario

} Higher share  
of renewables  
in power  
generation

| 100%  
electric  
transport  
2050

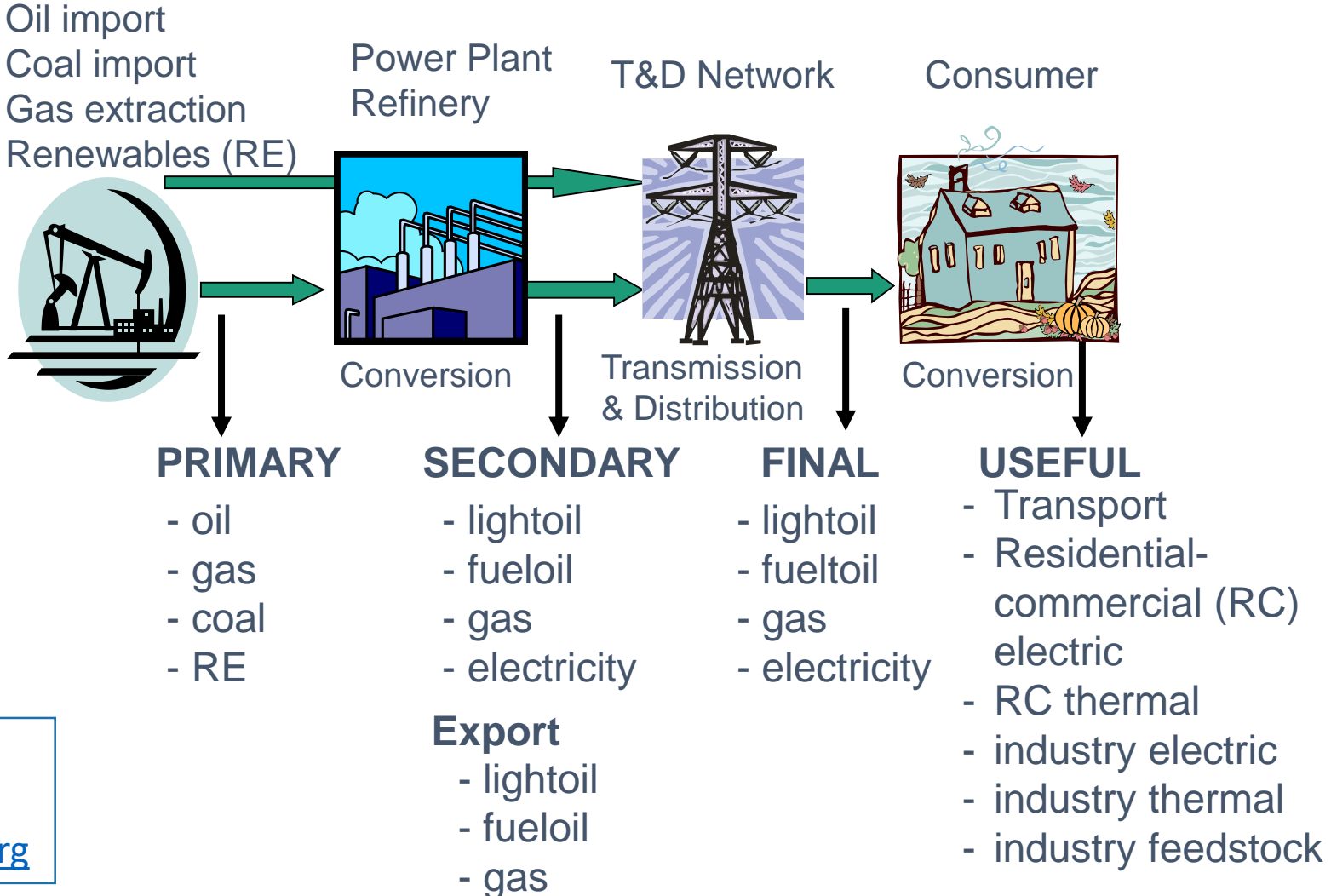
| 0 coal  
starting  
2030

| Carbon  
tax

Cost of policy  
vs baseline in  
terms of GDP

# Overview of MESSAGEix\_IL Energy System

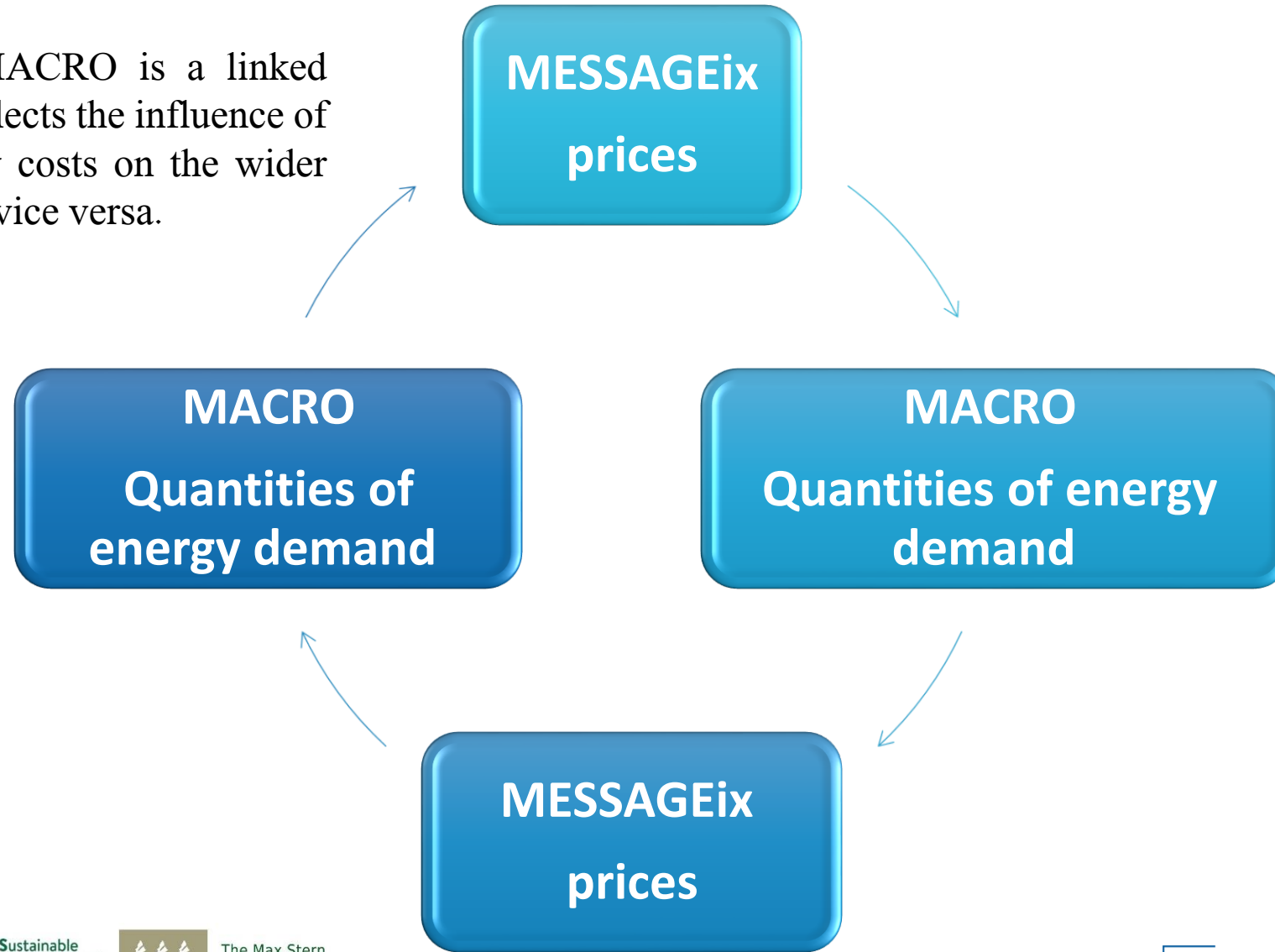
**Objective:** The least cost option for meeting certain services (demand) over the modeling period



Open model, data and documentation  
<https://docs.messageix.org>

# Iteration between MESSAGEix-MACRO

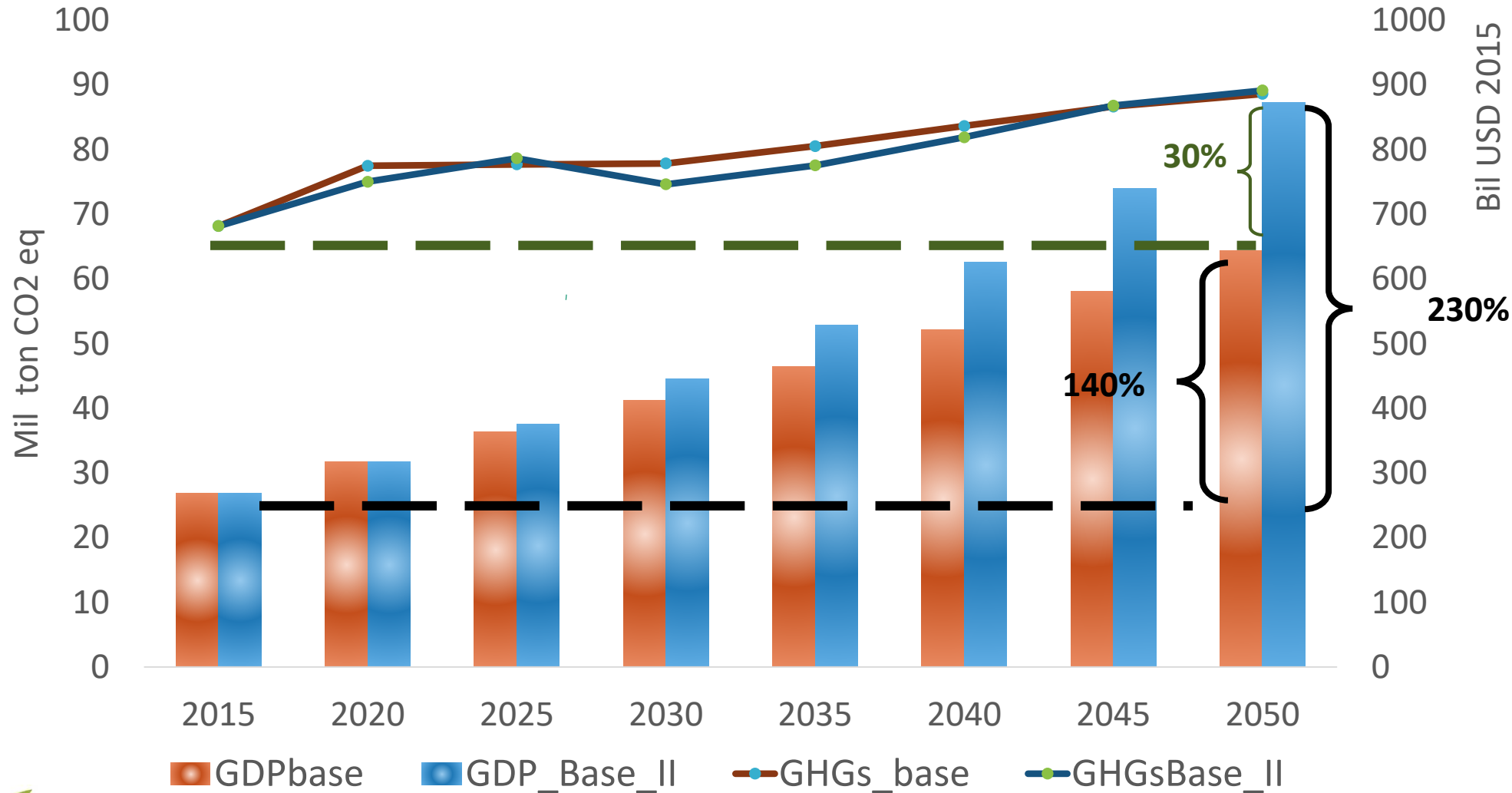
MESSAGE-MACRO is a linked model that reflects the influence of energy supply costs on the wider economy and vice versa.



<b>Scenarios:</b>		<b>Baseline Scenario I</b>	<b>Baseline Scenario II</b>	<b>Policy Scenario</b>	<b>Ambitious Policy Scenario</b>	
		<u>Low</u> population growth, renewables & EV	<u>High</u> population growth, renewables & EV	Targets & carbon tax	Targets & <u>High</u> carbon tax	
<b>Socio - economic</b>	Population average annual growth	1.7%	2.0%	follow baselines		
	GDP average annual growth	2.5%	3.5%	<b>Ambitious Policy Scenario</b> Targets & <u>High</u> carbon tax		
<b>Electricity</b>	RE in power generation	17% from 2030 on	30% from 2030 on	25% in 2030, 85% in 2050		
	Coal	Reduction of the capacity of coal power plants by 2030, remaining 3400 MW available till 2050		Gradual reduction to 0 by 2030		
	Gas	NG export of 25% of reserves by 2050		No bound on NG capacity after 2025		
<b>Electric Transport</b>		30% in 2050	60% in 2050	100% electric transport		
<b>Carbon tax Average annual in a period</b>		<b>No Carbon Tax</b>		2020	\$0	\$0
				2025	\$23.3	\$61.8
				2030	\$48	\$145
				2035	\$53	\$160
				2040	\$58	\$176
				2045	\$62	\$190
				2050	\$67	\$205
				2055+	\$69	\$212

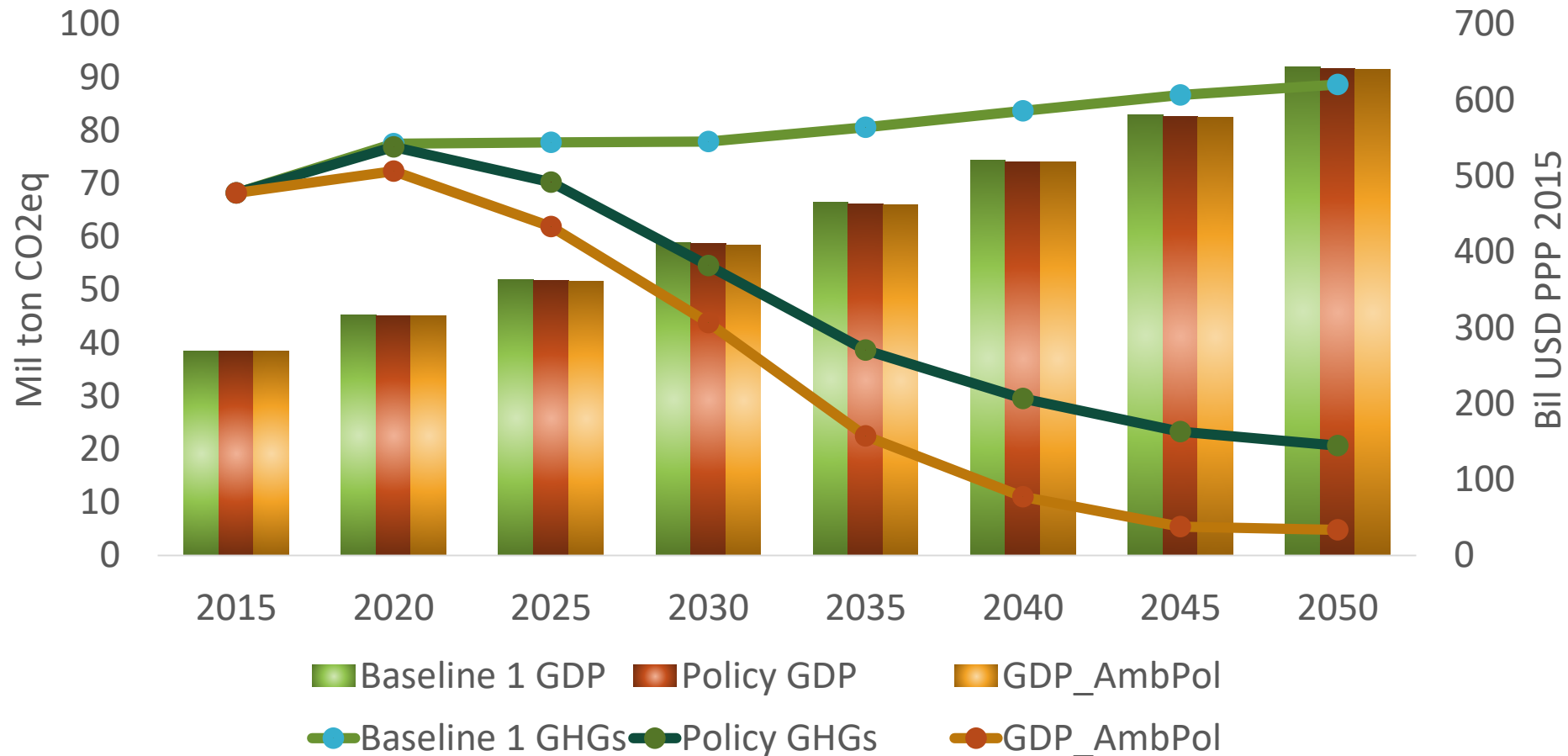
# Results:

## Baseline I&II: GHG emissions and GDP



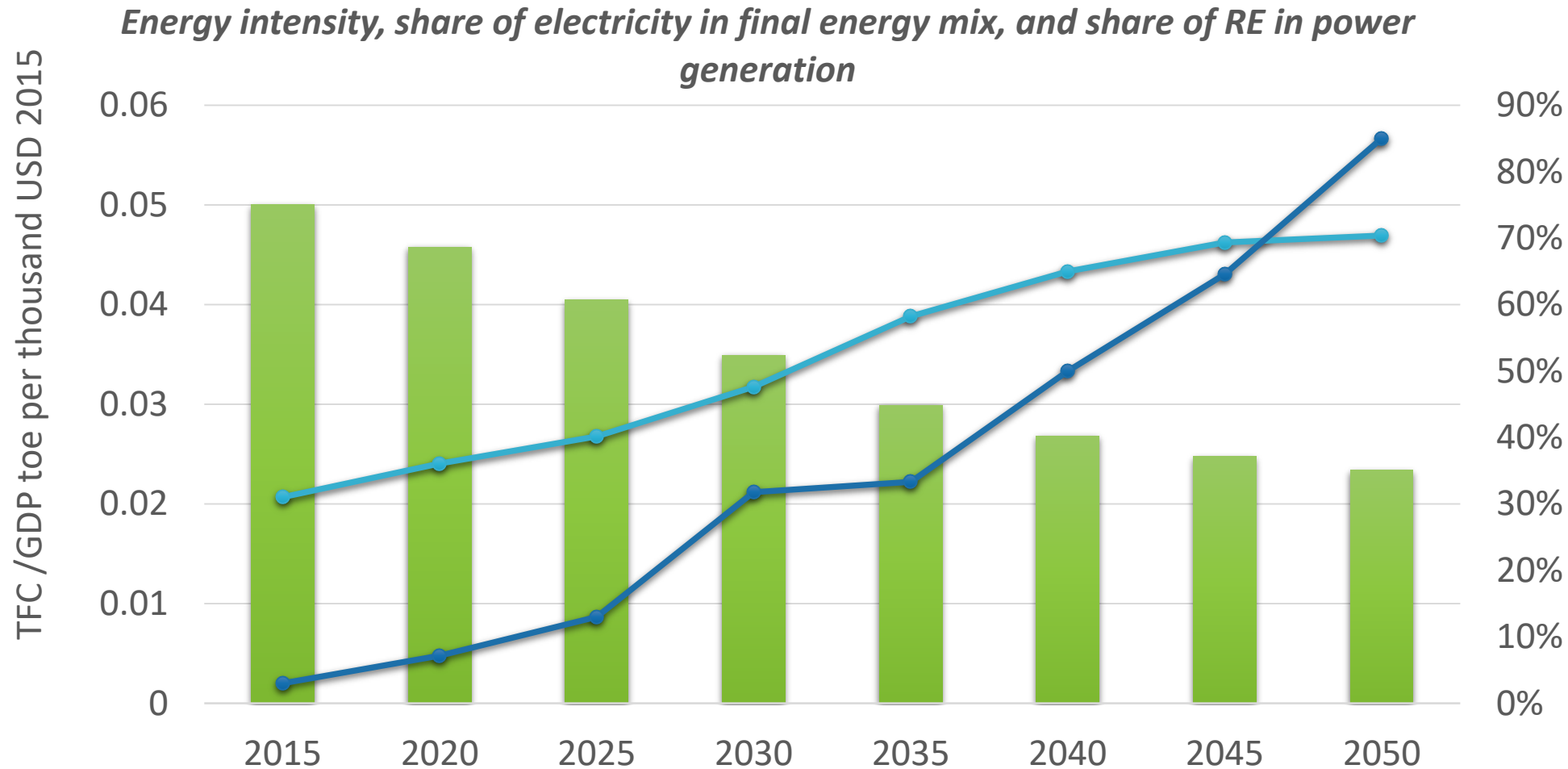
■ GDPbase   
 ■ GDP\_Base\_II   
 —●— GHGs\_base   
 —●— GHGsBase\_II

# GDP and GHG emissions in Baseline 1, Policy and Ambitious policy scenarios





# The whole story in 3 energy indicators



energy intensityPol

share electricity inTFC

RE in Elec



The Max Stern  
**Yezreel Valley  
College**

Ruslana Rachel Palatnik

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# Few remarks

- Only energy related GHG emissions are analyzed
- Only direct costs of the transition are evaluated
- Related benefits for health, productivity, are not in the model
  
- BUT
- Khan et al (2019) analyzed climate impact on countries' productivity
- Israel will **lose 1.15%** GDP per capita in 2050 in case of “no global climate mitigation policy”
- Israel will **gain 0.24%** GDP per capita in 2050 in case of “global climate policy”

# To conclude

- Relatively low **carbon tax values reduce energy-related GHG by 66%** in 2050 comparing to an **increase of 30% in the Baseline-I** with only a minor impact on GDP growth.
- ➔ There is a synergy between adopting emission reduction targets and the need for considerable investment in infrastructure to achieve the Israeli economy's growth targets, given the expected demographic growth.
- Important step for decarbonization is diverting energy production from the use of polluting fossil fuels to RE while electrifying the economy.
- The improved efficiency and transition to RE are partly due to the exogenous targets for RE in power generation and full electrification of transport and are partly due to the imposition of a carbon tax ➔ policy targets and carbon tax are required.

*Within crisis, are the seeds of opportunity*

-Marilyn Monroe

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