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# The social and economic impacts of green growth policies in Vietnam

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# 1-Context setting



- **Vietnam's Green Growth Strategy:** approved in 2012 (*targets such as 8-10% GHG emissions intensity reduction, 1-1.5% annually reduction in energy consumption, etc.*)
- **Implementation:** 3 periods: 2012-2020 (Preparation & Pilot); 2021-2030 (Implementation acceleration); 2030-2050 (Preservation). Detailed action plan is being prepared.
- ⇒ **Measuring the impacts:** ex-ante, policy design, monitoring.

## 2- Our study

- **Objectives:** To measure the ex-ante social and economic impacts of some of future green growth policies.
- **Green growth policies considered:**
  - Subsidy reform
  - Environmental tax
  - Energy efficiency
  - Low carbon investment (renewable energy)



# Method: Computable General Equilibrium (CGE) model



- **Country CGE model** (original model by James Thurlow)
- **Extension:** Substitution between energy and value added and among energy types
- **Dynamic CGE model:** Recursive dynamics.
- **Baseline scenario:** Vietnam economic growth path during 2011-2040 period.
- **4 green growth** policy scenarios: Incremental introduction of green growth policies into the economy.
- **Impacts:** Difference on the social & economic indicators of different scenarios

# Baseline & Green growth policy scenarios



Baseline	Scenario 1- (Subsidy and tax reform)	Scenario 1+ Energy efficiency	Scenario 1+ Low carbon investment	Scenario 1 + increase in external financial sources
<ul style="list-style-type: none"><li>-Vietnam's GDP growth rate 2011-2040: 6.02% annually</li><li>- World annual energy price (slight increase in coal, fuel, natural gas)</li></ul>	<ul style="list-style-type: none"><li>- Reduce subsidies on coal, fuel, natural gas and electricity</li><li>- Impose environmental tax on coal, natural gas, fuel.</li></ul>	<ul style="list-style-type: none"><li>-5% energy efficiency improvement in energy intensive industries</li><li>- 0.5% of the rest.</li></ul>	<ul style="list-style-type: none"><li>- More investment in renewable and natural gas-based electricity</li></ul>	<ul style="list-style-type: none"><li>- Increase in external fund to Vietnam (foreign saving)</li></ul>

# Results: Long-term impacts



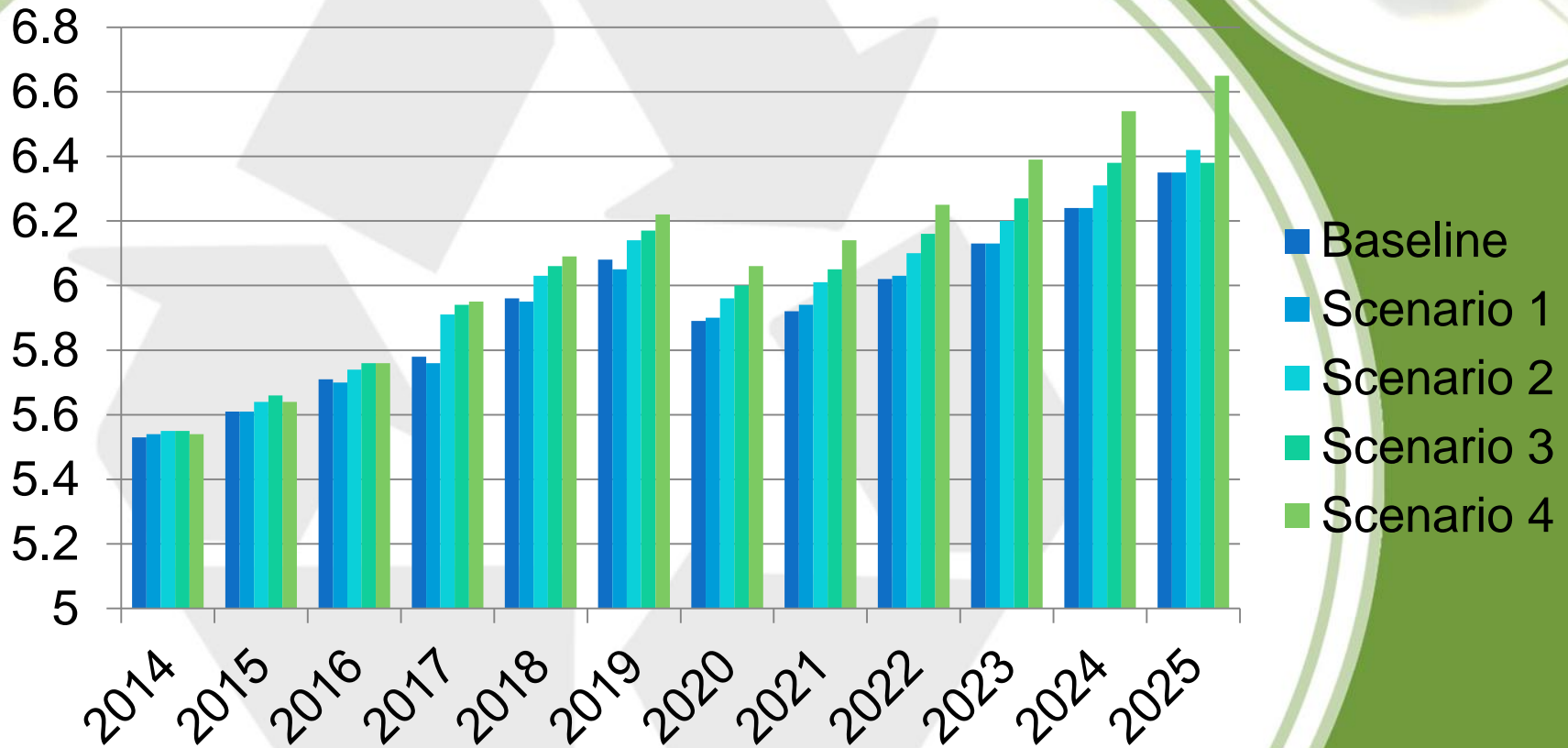
## Annual % GDP gain of GG scenarios vs. baseline 2011-2040

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
<b>GDP</b>	<b>0.17</b>	<b>0.66</b>	<b>0.66</b>	<b>3.32</b>
<i>Of which:</i>				
<i>Agriculture</i>	0.51	1.52	0.76	1.01
<i>Industry</i>	0.31	0.93	1.40	4.51
<i>Services</i>	0.15	0.46	0.00	2.45
<i>Manufacturing</i>	0.28	0.42	0.42	2.39

# Results: Short-term vs. long-term

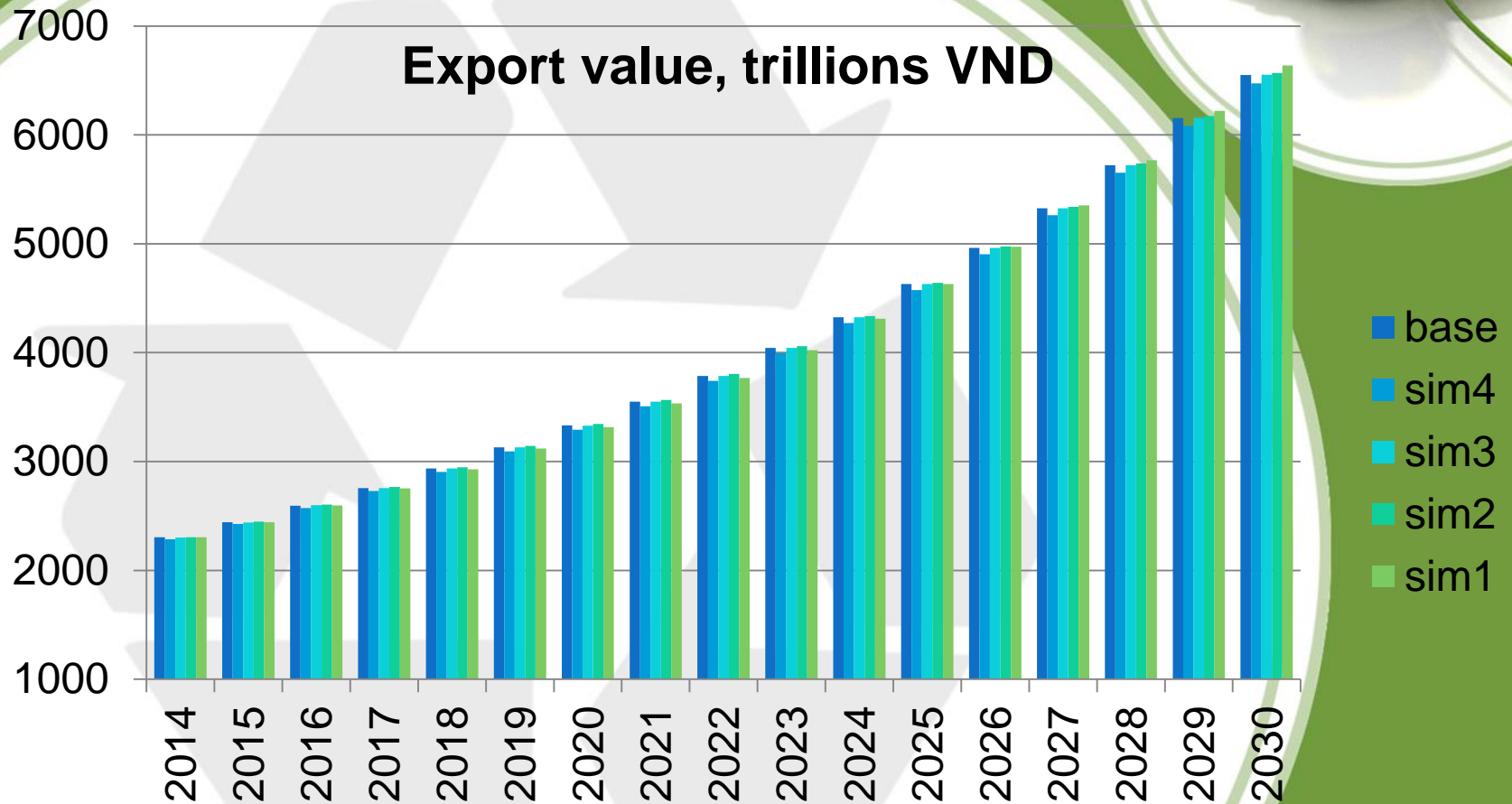


Annual GDP growth rate, %





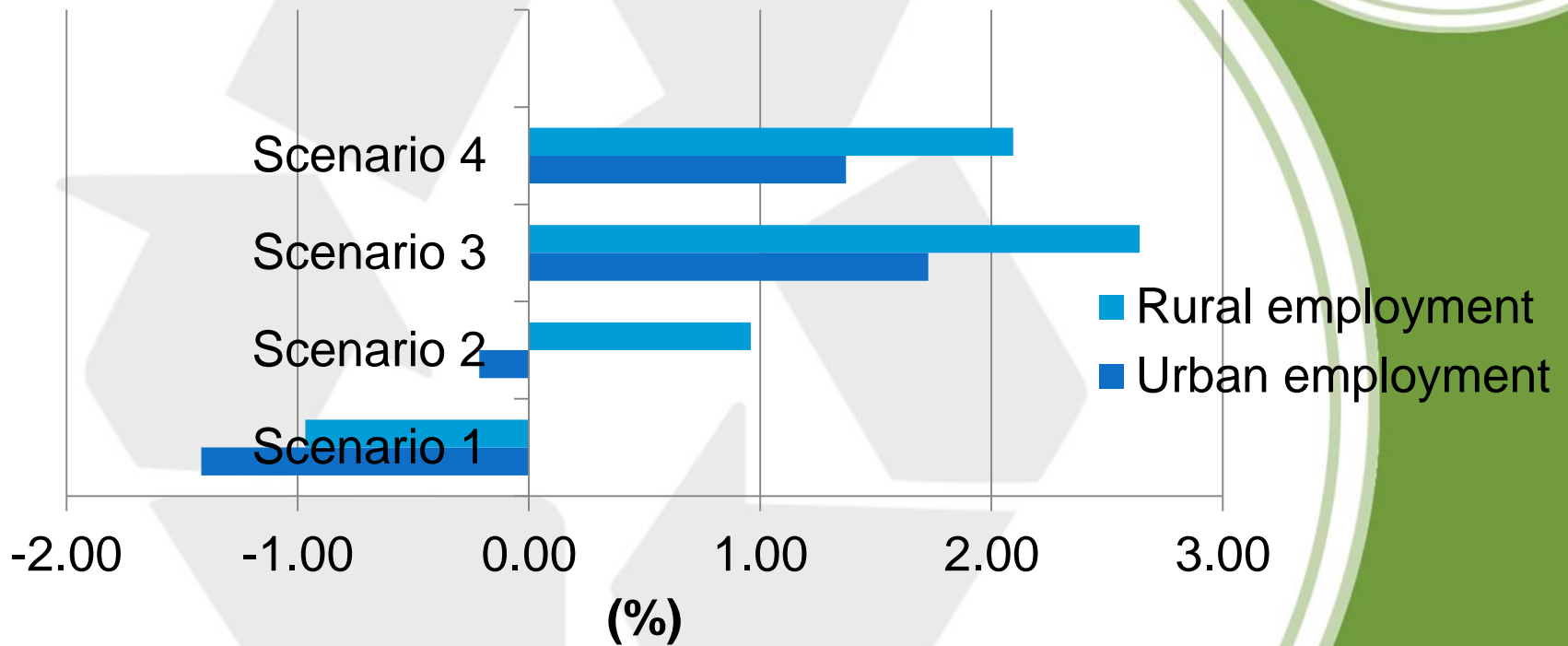
# Results- Short-term vs. long-term



# Results- Concerning impacts



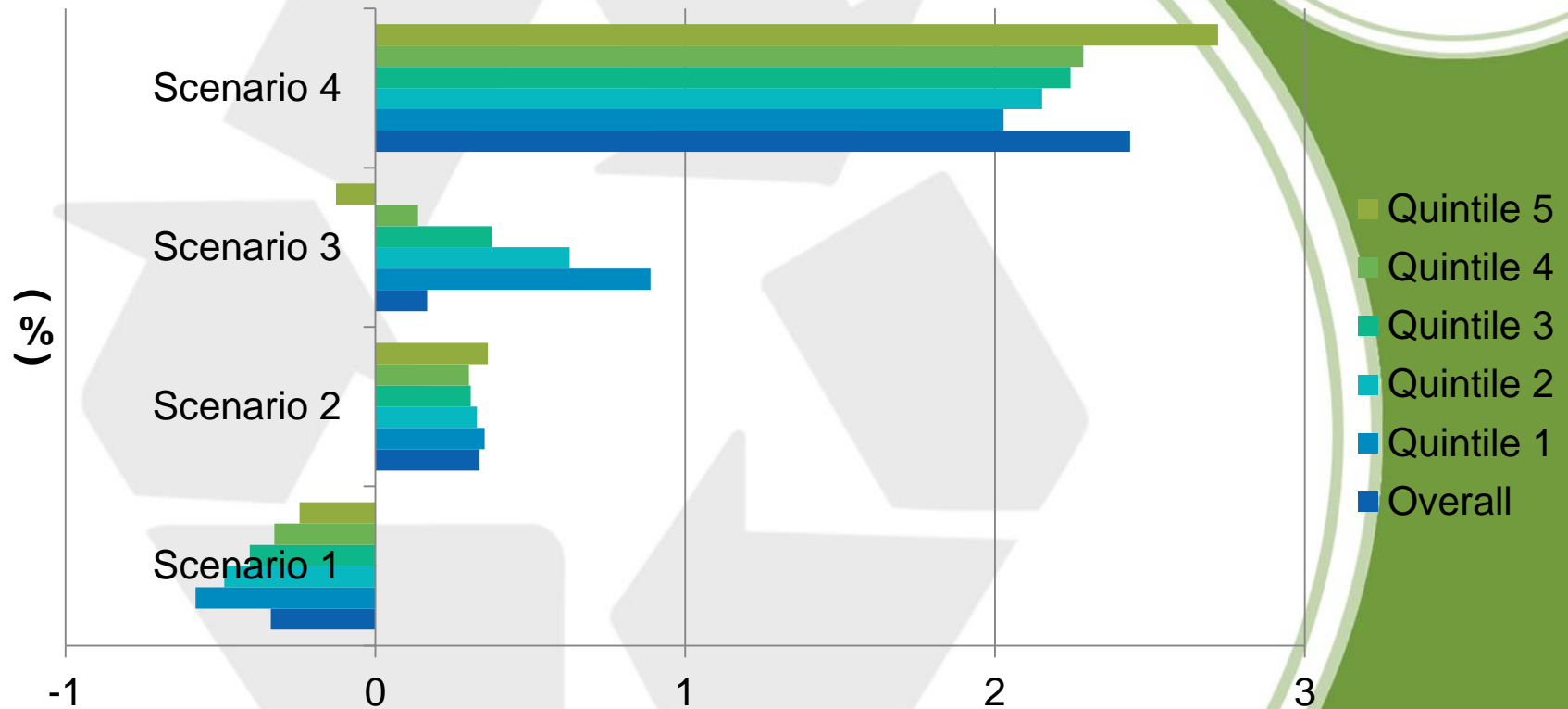
**Average % deviation of employment vs. Baseline**



# Results- Concerning issues



Average annual household consumption % deviation vs. Baseline



# 3- Policy implications



- **On green growth implementation:**
  - Short-term vs. long-term: Possible loss in short-term in some cases but always beneficial in the long-term.
  - Comprehensive policy actions will compensate the negative impacts.
  - Social impacts should be paid attentions to and can be addressed.
  - Additional external financial supports will ease the negative impacts and make green growth much more beneficial to developing countries.

# Policy implications

- **On impact measuring and monitoring:**
  - CGE model method is relevant in quantifying the macro impacts
  - Better to combine with bottom-up models
  - Data quality is very important in impact measuring and monitoring.





# Thanks for your attentions!

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