



### Training Workshop for the countries of Eurasia, Central Asia and the Caucasus: Deep dive into tracking NDC mitigation commitments under the Paris Agreement

Presentation: Summary of filling CTF Reporting Tables using GACMO and LEAP Aiymgul Kerimray Mitigation specialist UNEP Copenhagen Climate Centre





# GACMO and LEAP can be useful for identifying target level for NDC indicator

GACMO and LEAP tools allow to:

- compare mitigation potential and abatement costs of mitigation measure/measures
- identify economy-wide GHG target based on the set of mitigation measures
- identify sectoral targets (capacity of renewable energy, hectares of reforestation, number of electric vehicles etc.) in line with economy-wide GHG emissions target



### Marginal Abatement Revenue Curve in GACMO

- The MAR curve allows a user to have a quick graphical comparison among all the selected options in terms of their cost efficiency and emissions reduction.
- In the graph of the MAR curve made by GACMO, all the options which are located above the X-axis are "win-win" options.
- It means that their implementation would allow reducing the GHG emissions compared to the reference option while, at the same time, their implementation would allow the country to make a cost saving in comparison to the implementation cost of the reference option.



### MACC Curve in LEAP

 Marginal Abatement Cost Curves (MACCs) are a useful tool for assessing the cost and abatement potential of various mitigation options and for prioritizing which of a list of potential measures might be most actively pursued.



## Cost-benefit analysis with LEAP

- Costs relative to the baseline scenario are shown as positive values, while benefits are shown as negative values.
- The cost summary can also compare the environmental externality costs of each scenario.
- <u>Cost-Benefit Summary Report (sei.org)</u>



## Tools can be useful for identifying target level for NDC indicator

GACMO and LEAP tools can be useful identify economy-wide GHG target and sectoral-level target/targets





**CTF Table 1.** Description of selected indicator



**CTF Table 2.** Definitions needed to understand NDC

## Methodologies

### **GACMO** and **LEAP** tools



**CTF Table 3.** Methodologies and accounting approaches

- Key parameters, assumptions, definitions, data sources and models used.
- Sector-, category, or activity specific assumptions, **methodologies** ad approaches

### GHG emissions projections

### **Result of GACMO and LEAP tools**





**CTF Table 7.** Information on projections of greenhouse gas emissions and removals under a 'with measures' scenario



**CTF Table 8.** Information on projections of greenhouse gas emissions and removals under a 'with additional measures' scenario

**CTF Table 9**. Information on projections of greenhouse gas emissions and removals under a 'without measures' scenario

**CTF Table 10.** Projections of key indicators

# Key underlying assumptions and parameters used for the projections

### Assumptions used in modeling tools

#### Table 1

Key assumptions, parameters, and and mathematical functions considered in the study.

Key assumptions parameters	Household (ml)	Household size (Person)	Urban share (%)	Rural Share (%)	Population (ml)	Population Growth rate (%)	Income (\$)	Income growth rate (%)	GDP (\$Billion)	Household electricity consumption (kWh/Year per HSS)	Mathematical functions (–)
2015: Current account scenario	2.5	2.2	81.1	18.9	5.4	-	61,500			26,500	Simple: AL*FEI
2050: Projections and policy			71.8		6.4 7.2	0.75 up to 0.8	Growth	0.7–1.2	Growth		Interp, Growth, Step, GrowthAs

CTF Table 11. Key underlying assumptions and parameters used for projections

# Expected GHG emissions reduction by mitigation policies and measures

	A	В	C	D	E	F	G	Н		J K
	Total GHG mitigation in	Kazakhstan	In 2030	n 2030						
					Emission	Investment	Annual	Units	Emission	duction in 2030
					reduction		costs	penetrating	Per option	Added
	Туре	Reduction option	US\$/tonCO2	Sub-type unit	t CO2/unit	Million US\$	MUS\$/year	in 2030	kt/year	kt/year Frac.c
Э		Efficient lighting with CFLs	-20.29	1000 Bulps	93	0.0	0.0		0.00	0
)		Efficient lighting with LEDs	-34.06	1000 Bulps	190	0.0	0.0		0.00	0
1		Efficient lighting with LEDs replacing CFL	23.64	1000 Bulps	22	0.0	0.0		0.00	0
2		Efficient wood stoves	-933.25	1000 stoves	1,338	0.0	0.0		0.00	0
З		Efficient charcoal stoves	-62.01	1000 stoves	293	0.0	0.0		0.00	0
4		LPG stoves replacing wood stoves	74.17	1000 stoves	2,055	0.0	0.0		0.00	0
5		Efficient electric stoves	-0.93	1000 stoves	379	402.0	-2.1	6,000	2,271.14	2,271
5		Induction based cooking	318.09	1000 stoves	28	0.0	0.0		0.00	2,271
7		New passive home	-11.00	1000 new homes	20,746	0.0	0.0		0.00	2,271
З		Efficient refrigerators	13.75	1000 refrigerators	1,555.2	1556.4	128.3	6,000	9,330.93	11,602
3		Efficient refrigerators	13.75	1000 refrigerators	1,555.2	1556.4	128	3.3	8.3 6,000	3.3 <u>6,000</u> 9,330.93

#### **GACMO tool**

### **CTF Table 5 for NDC tracking**

5. Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving a nationally determined contribution under Article 4 of the Paris Agreement <sup>(a, b)</sup>

No	Name <sup>(c)</sup>	Description <sup>(d,e, f)</sup>	Objectives	Type of instrument <sup>(g)</sup>	Status <sup>(h)</sup>	Sector(s) offected <sup>(i)</sup>	Gases affected	Start year of implementation	Implementing entity or entities	Estimates of GHG emission reductions (kt CO2 eq) <sup>(j, k)</sup>		
NO.		Description	Objectives							Achieved	Expected	

# Achieved GHG emissions reduction by mitigation policies and measures

		J	K	L	M	N	0	Р	Q	R	S	Т	U	V	W	Х	Y	Z
1																Total		
2																Accumulated	Total	Total
3					A	Accumula	ted Imple	emented	mitigation	options						GHG	external	internal
4	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	reduction	finance	finance
5																kt/CO2e/yr	Millio	n US\$
6																0		
7																0		
8																0		
9																0		
10																0		
11																0		
12																0		
13																0		
14																0		
15																0		
10																		
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GACMO tool

### **CTF** Table 5 for NDC tracking

5. Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving a nationally determined contribution under Article 4 of the Paris Agreement <sup>(a, b)</sup> Estimates of GHG emission Type of reductions (kt CO2 eq) (j, k) Implementing Sector(s) Gases Start year of Description (d,e,f) Status (h) Name (c) Objectives instrument No. entity or entities affected (\*) affected implementation (q)Achieved Expected





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## Thank you for your attention!

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