

A6.4 Methodology baseline / CDM project transition

Ministry of the Environment, Japan

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Points for consideration

(1) Review of A.64 baseline approaches in draft texts

- Reviewing options of the 64 methodology based on the draft text ver.1 and ver.2.
- Reviewing CDM methodologies actually applied.

(2) CDM project transition timelines

- Summarizing the discussion on CDM project transition based on the draft text ver. 3, and clarifying what points should be discussed.

(3) Analyzing CDM projects and methodologies after 2021.

- In the transition of CDM projects, analyzing the types and numbers of CDM methodologies that may be transitioned and clarifying the points to consider (Considering reduction amount, host country, operation status, etc.)

(4) Application of A64 baseline approaches to CDM methodologies

- The methodologies considered in step 3 will be compared with A6.4 baseline options, and examples of methodologies for 64 mechanisms will be examined to provide an image for the discussion on baseline options .

Review of A.64 baseline approaches

<Baseline approaches in draft texts>

Version 1	Version 2	Version 3
<p>Option A</p> <ul style="list-style-type: none"> ➤ Performance-based approach, ➤ Business as usual emissions, ➤ Historical emissions. <p>Option B</p> <ul style="list-style-type: none"> ➤ Best available technology, ➤ Performance-based approach, ➤ Benchmark baseline <p><u>For projects not applied above</u></p> <ul style="list-style-type: none"> ➤ Projected Emission, ➤ Historical emission. <p>Option C</p> <ul style="list-style-type: none"> ➤ Performance-based approach <p><u>For projects not applied above</u></p> <ul style="list-style-type: none"> ➤ An alternative approach can be proposed, with the approval from the host Party and a justification. 	<p>Option A</p> <ul style="list-style-type: none"> ➤ Best available technology, ➤ Performance-based approach, ➤ Benchmark baseline <p><u>For projects not applied above</u></p> <ul style="list-style-type: none"> ➤ Projected Emission, ➤ Historical emission. <p>Option B</p> <ul style="list-style-type: none"> ➤ Performance-based approach <p><u>For projects not applied above</u></p> <ul style="list-style-type: none"> ➤ An alternative approach can be proposed, with the approval from the host Party and a justification. 	<p>The CMA shall adopt principles for methodologies and baseline and additionality approaches.</p>

(ver.1 para 5(b), ver.2 para 5(b), ver.3 para 5(c))

In the context of developing and approving new methodologies for the mechanism, review the baseline and monitoring methodologies in use for the clean development mechanism under Article 12 of the Kyoto Protocol and other existing market-based mechanisms.

Review of A.64 baseline approaches

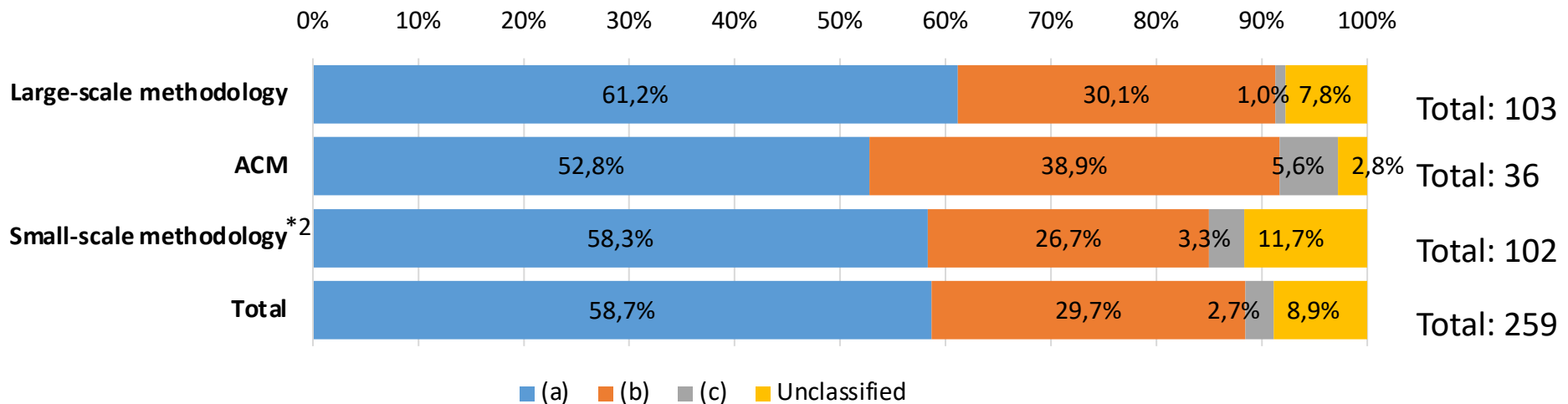
Approach	COP25 presidency texts
Best available technology	
ver.1 option B (ver.2 option A)	An approach based on technologies that represent an economically feasible and/or environmentally sound course of action.
Performance-based approach	
ver.1 option A	Taking into account: <ol style="list-style-type: none"> I. [Technologies that represent an economically feasible [and environmentally sound] course of action;] II. The emissions of activities providing similar outputs and/or services in similar social, economic, environmental and technological circumstances; III. Barriers to investment;
ver.1 option B (ver.2 option A)	A baseline is based on the emissions of activities providing similar outputs and/or services in <u>similar social, economic, environmental and technological circumstances</u> .
ver.1 option C (ver.2 option B)	An approach where the baseline is set <u>at least at the average emission level of the best performing comparable activities providing similar outputs and services within a defined scope and boundary in the past three years and where the host Party may determine a more ambitious level at its discretion</u> .
Benchmark baseline	
ver.1 option B (ver.2 option A)	A baseline is based on an ambitious benchmark representing a level of GHG emissions for activities within a defined scope and boundary
Business as usual emissions / [Projected emissions]	
ver.1 option A (ver.1 option B) (ver.2 option A)	(no definition)
Historical emissions	
ver.1 option A (ver.1 option B) (ver.2 option A)	(no definition)

Baseline approaches in CDM

- Out of 216*¹ approved methodologies,
 - ✓ About 60% of methodologies apply (a)(Existing actual or historical emissions)
 - ✓ About 30 % of methodologies apply (b)(technology that represents an economically attractive course of action)
 - ✓ About 3% of methodologies apply (c)(performance is among the top 20 per cent)

Types of baseline approaches (CDM M&P para48(a to c))

(a)	Existing actual or historical emissions, as applicable;
(b)	Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment;
(c)	The average emissions of similar project activities undertaken in the previous five years, in similar social, economic, environmental and technological circumstances, and whose performance is among the top 20 per cent of their category.



*1: Some methodologies are applied to several types of approaches

*2: For small-scale methodologies, applied approaches are not clearly defined in methodology documents

Baseline approaches in CDM

- (b) and (c) are not applied to some project types (e.g. Afforestation & reforestation, HFC, N2O, SF6).

Blue: only (a) can be applied, **Red:** Large potential ERs after 2021

(a)	Existing actual or historical emissions, as applicable;
(b)	Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment;
(c)	The average emissions of similar project activities undertaken in the previous five years, in similar social, economic, environmental and technological circumstances, and whose performance is among the top 20 per cent of their category.

<(c) applied>

Energy efficiency
Fuel switch
(AMS-II.E., AMS-III.B., ACM0013)

<(b) applied>

Biofuels
Biogas
Biogas ; Fuel switch
Biomass (**AMS-I.E.**)
Cement
Cement ; Biomass
Energy efficiency (**AMS-II.G.**)
Energy efficiency ; Fuel switch
Fuel switch
Hydro power (**mini-grid system, ACM002**)
Hydro power ; Other renewable energies
Material use
Methane avoidance
Methane recovery & utilization (**ACM0001**)
Methane recovery & utilization ; Methane avoidance
Methane recovery & utilization ; Transportation
Other renewable energies
PFC reduction and substitution
PFC reduction and substitution ; Energy efficiency
PV (**mini-grid system , ACM002**)
Transportation
Waste gas/heat utilization (**ACM0012**)
Waste gas/heat utilization ; Fuel switch
Wind power (**mini-grid system , ACM002**)

<(a) applied>

Afforestation & reforestation

Biofuels
Biogas

Biogas ; Biomass

Biogas ; Fuel switch
Biomass

Cement

Cement ; Biomass

Energy efficiency

Energy efficiency ; Biogas

Energy efficiency ; Fuel switch
Fuel switch

HFC reduction/avoidance

Hydro power
Hydro power ; Other renewable energies

Leak reduction

Material use
Methane avoidance

Methane avoidance ; Biogas

Methane recovery & utilization
Methane recovery & utilization ; Methane avoidance
Methane recovery & utilization ; Transportation

N2O decomposition

Other renewable energies
PFC reduction and substitution
PFC reduction and substitution ; Energy efficiency
PV

SF6 replacement

Transportation
Waste gas/heat utilization

Waste gas/heat utilization ; Energy efficiency

Waste gas/heat utilization ; Fuel switch
Wind power

Wind power ; Other renewable energies

Wind power, PV

Baseline approaches in VCS

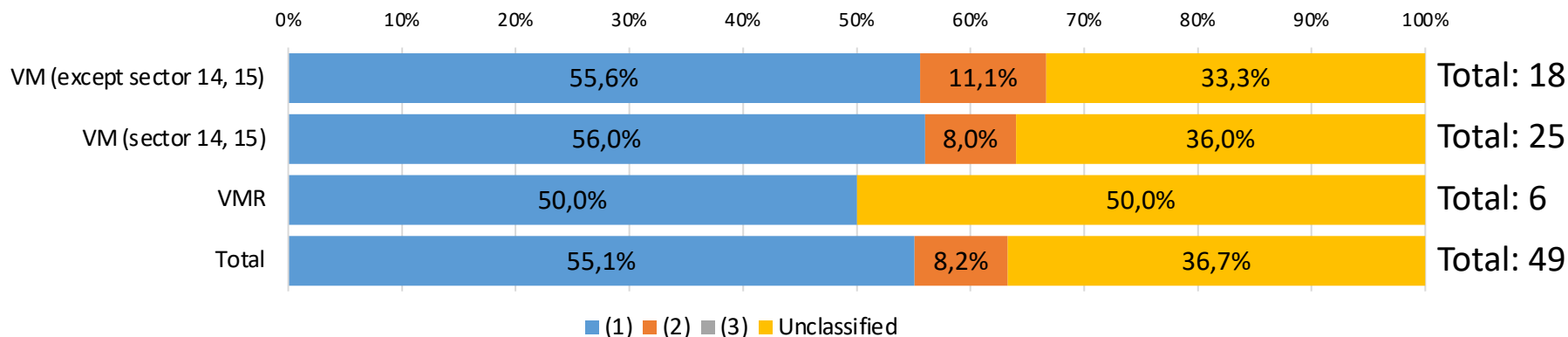
- In the VCS, each methodology is required to be below BaU in “Methodology Requirements”

“A project activity is additional if it can be demonstrated that the activity results in emission reductions or removals that are in excess of what would be achieved under a “business-as-usual” scenario and the activity would not have occurred in the absence of the incentive provided by the carbon markets.”

- Each BL is set depending on project types.

Types of baseline approaches	
(1)	Project method: A project method is a methodological approach that uses a project-specific approach for the determination of additionality and/or crediting baseline.
(2)	Performance method: These methods establish performance benchmark metrics for determining additionality and/or the crediting baseline. Projects that meet or exceed a predetermined level of the metric may be deemed as additional and a pre-determined level of the metric may serve as the crediting baseline.
(3)	Activity method: "These methods pre-determine additionality for given classes of project activities using a positive list. Projects that implement activities on the positive list are automatically deemed as additional and do not otherwise need to demonstrate additionality. One of three options (namely activity penetration, financial feasibility or revenue streams) is used to qualify the project activity for the positive list, as set out in Section 3.5.9."

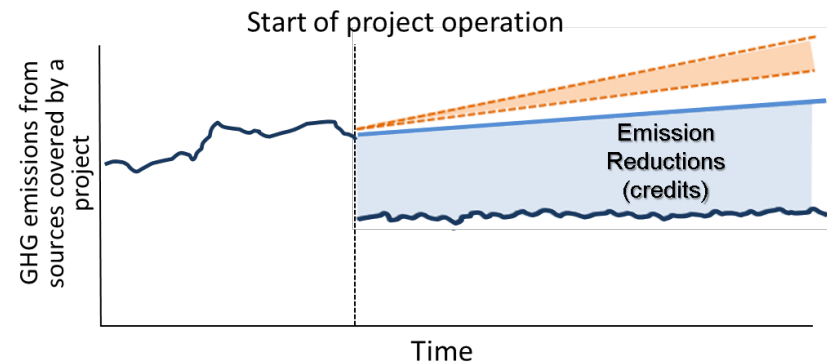
Sector: 14.Agriculture Forestry and Other Land Use (AFOLU), **Sector 15:** Livestock and manure management



Baseline approaches in the JCM

- In the JCM, types of baseline approaches are not clearly defined, but baselines should be below BaU.
- Also, each approved methodology are developed compared with economically feasible and environmentally friendly technology, data with good carbon efficiency, and the currently feasible efficiency.

- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the proposed JCM project in the partner country.
- This approach will ensure a net decrease and/or avoidance of GHG emissions.



Types of baseline approaches

(1')	Based on economically feasible and environmentally friendly technology.
(2')	Based on data with good carbon efficiency from the latest past data of existing or similar equipment.
(3')	Based on the target standard and the efficiency set to exceed the currently feasible efficiency

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Approved JCM methodologies



■ (1') ■ (2') ■ (3') ■ Unclassified

CDM project transition

Draft text relevant to CDM project transition

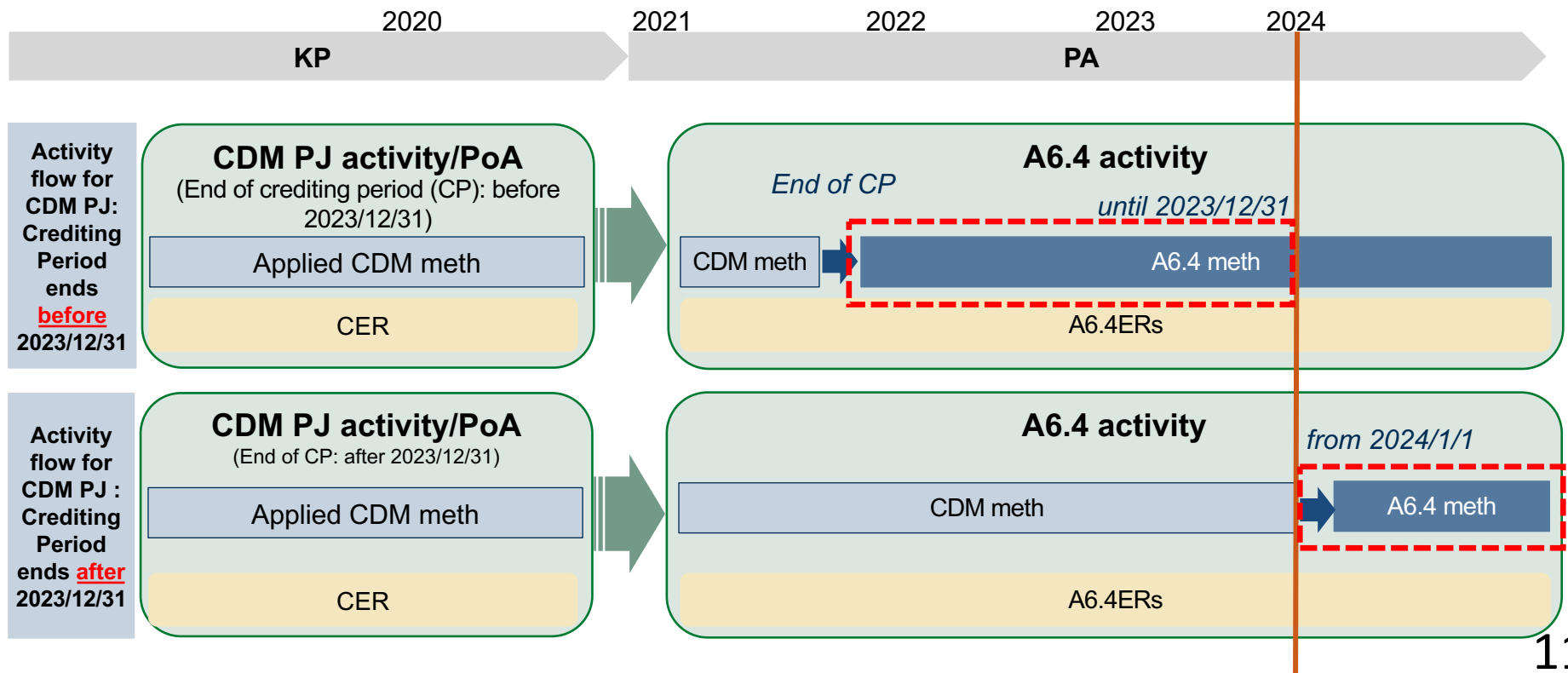
(COP25 Presidency texts)

(ver.1 para 95, ver.2 para 85, ver.3 para 72)

- Project activities and programmes of activities registered under the clean development mechanism under Article 12 of the Kyoto Protocol (CDM) **may transition to the mechanism and be registered as Article 6, paragraph 4, activities subject to:**
 - a. **The provision of approval of such transition to the Supervisory Body by the host Party** per decision 3/CMP.1 of the CDM project activity or CDM programme of activities (CDM host Party), by no later than 31 December [2023][X date] (draft text ver.1 para 96);
 - b. **The compliance with these rules, modalities and procedures and any further relevant decisions of the CMA and relevant requirements** adopted by the Supervisory Body, including those that relate to the application of a corresponding adjustment consistent with decision X/CMA.2 (Guidance relating to cooperative approaches referred to in Article 6, paragraph 2);
- **The transition shall have been completed no later than 31 December 2023.**

CDM project transition timelines

- A6.4ERs may be issued for emission reductions achieved on or after 1 January 2021.
- Methodologies applied for projects its Crediting Period (CP) ends before 31/12/2023 need to be updated before the renewal of the CP.
- After 1/1/2024, all methodologies applied for projects its Crediting Period (CP) ends after 1/1/2024 need to be updated. (out of 216 approved methodologies, 91 methodologies are applied to the CDM projects its CP end after 2021)
- This schedule can be changed because of the postponement of COP26.



Analyzing CDM projects

How many CDM projects can be possibly transitioned

- Out of registered PAs and CPAs (PAs: 7,833, CPAs: 2,538), only 1,146 PAs and 2,203 CPAs can renew under the 64

Registered PAs / CPAs (PAs: 7,833, CPAs: 2,538)	
Current crediting period ends after 1/1/2021 <ul style="list-style-type: none"> ➤ PAs: 2,548 ➤ CPAs: 2,475 	
Current crediting period ends before 31/12/2023 <ul style="list-style-type: none"> ➤ PAs: 1,996 ➤ CPAs: 476 	Current crediting period ends after 1/1/2024 <ul style="list-style-type: none"> ➤ PAs: 552 ➤ CPAs: 1,999
Crediting period is fixed or Third crediting period <ul style="list-style-type: none"> ➤ PAs: 1,402 ➤ CPAs: 272 	Crediting period is renewable <ul style="list-style-type: none"> ➤ PAs: 594 ➤ CPAs: 204

PAs: 1,146
CPAs: 2,203

Analyzing CDM methodologies (PAs)

Methodology ID	Methodology (Top 10)	Number of projects		Expected ERs (Mt-CO2)	ERs(%) (2021 1/1-)	Accumulate (%)
		CP end before 2023/12/31	CP end after 2024/1/1			
ACM0002	Grid-connected electricity generation from renewable sources	570	225	392	50.2%	50.2%
AM0029	Grid Connected Electricity Generation Plants using Natural Gas	18	6	67	8.5%	58.7%
ACM0001	Flaring or use of landfill gas	51	11	27	3.4%	62.1%
AMS-I.D.	Grid Connected Renewable Electricity Generation	630	115	27	3.4%	65.5%
ACM0012	GHG emission reductions from waste energy recovery projects	100	16	27	3.4%	68.9%
AM0023	Leak detection and repair in gas production, processing, transmission, storage and distribution systems and in refinery facilities	8	2	25	3.2%	72.1%
ACM0008	Abatement of methane from coal mines	33	2	25	3.2%	75.3%
ACM0013	Construction and operation of new grid connected fossil fuel fired power plants using a less GHG intensive technology	4	1	18	2.3%	77.6%
AM0021	decomposition of N2O from existing adipic acid production plants	2	0	16	2.0%	79.6%
AM0009	Recovery and utilization of gas from oil fields that would otherwise be flared or vented	9	4	14	1.8%	81.1%

Analyzing CDM methodologies (PoAs)

Methodology ID	Methodology (Top 10)	Number of projects (CPA)		Expected ERs (Mt-CO2)	ERs(%) (2021 1/1-)	Accumulate (%)
		CP end before 2023/12/31	CP end after 2024/1/1			
AMS-II.G.	Energy efficiency measures in thermal applications of non-renewable biomass	104	342	231	43.6%	43.6%
AMS-I.E.	Switch from non-renewable biomass for thermal applications by the user	9	80	79	14.9%	58.5%
ACM0002	Grid-connected electricity generation from renewable sources	53	83	73	13.8%	72.4%
AMS-III.AV.	Low greenhouse gas emitting safe drinking water production systems	16	117	33	6.3%	78.6%
AMS-I.A.	Electricity generation by the user	1	18	19	3.7%	82.3%
AMS-III.D.	Methane recovery in animal manure management systems	5	1091	15	2.9%	85.2%
ACM0001	Flaring or use of landfill gas	4	4	15	2.9%	88.1%
ACM0016	Mass Rapid Transit Projects	0	4	14	2.8%	90.9%
AMS-I.D.	Grid Connected Renewable Electricity Generation	40	73	10	2.0%	92.9%
AMS-I.C.	Thermal energy production with or without electricity	108	50	7	1.4%	94.3%