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# 6.4 baseline and CDM transition

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Climate Change Expert Group

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# A.64 baseline approaches (Draft Text)



Approach	COP25 presidency texts
<b>Best available technology</b>	
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.
<b>Performance-based approach</b>	
(1) ver.1 option A	Taking into account: <ol style="list-style-type: none"> <li>I. [Technologies that represent an economically feasible [and environmentally sound] course of action;]</li> <li>II. The emissions of activities providing similar outputs and/or services in similar social, economic, environmental and technological circumstances;</li> <li>III. Barriers to investment;</li> </ol>
(2) 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> .
(3) 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> .
<b>Benchmark baseline</b>	
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
<b>Business as usual emissions / Projected emissions</b>	
ver.1 option A (ver.1 option B) (ver.2 option A)	(no definition)
<b>Historical emissions</b>	
ver.1 option A (ver.1 option B) (ver.2 option A)	(no definition)

# Baseline approaches in the CDM

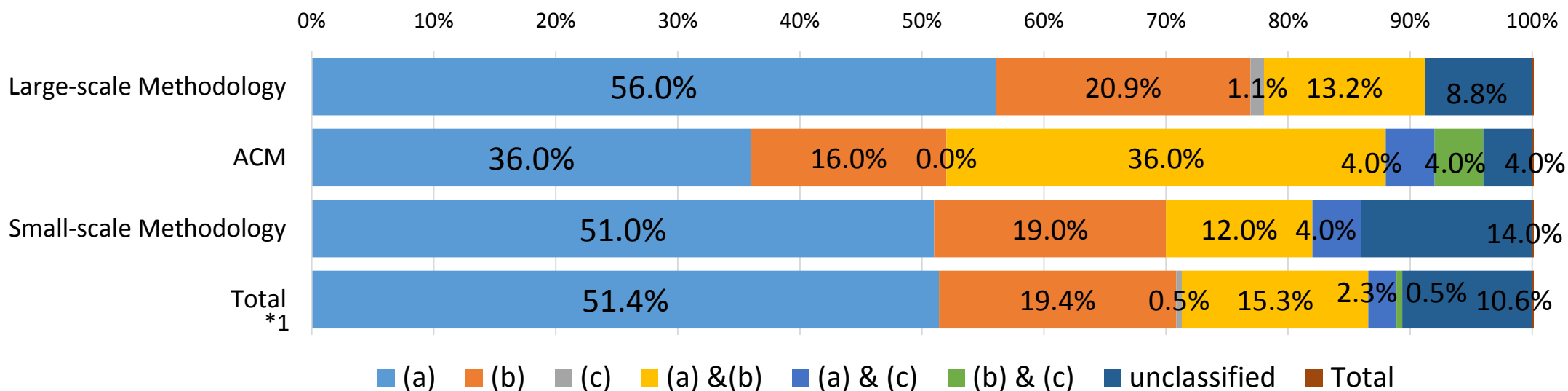


Out of 216 approved methodologies (\*)

- About 50% of methodologies apply only (a, Existing or historical emissions).
- About 20% of methodologies apply the combination of baseline approaches.
- About 1 % of methodologies apply the performance approach (c)

## 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.



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

# Baseline approaches in the CDM



Out of 35 types projects registered under the CDM

- 11 types of projects applied only approach (a)
- Another 24 types of projects applied approach (b) or (c)

## Only (a) applied

Project type	Methodology
➤ Afforestation & reforestation	AR-ACM0003, AR-AMS0007, AR-AM0004, AR-AMS0001, AR-ACM0001, AR-AM0009, AR-AMS0004, AR-AM0002, AR-AMS0003, AR-AM0005, AR-AM0010, AR-AM0003, AR-AM0001
➤ Biogas ; Biomass	AMS-I.D.
➤ Energy efficiency ; Biogas	AMS-III.M.
➤ HFC reduction/avoidance	AM0001, AMS-III.N.
➤ Leak reduction	AM0023
➤ Methane avoidance ; Biogas	AMS-I.D.
➤ N2O decomposition	ACM0009, ACM0019, AM0034, AM0019, AM0028, AM0021
➤ SF6 replacement	AM0065, AM0078, AM0079, AM0035
➤ Waste gas/heat utilization ; Energy efficiency	AMS-III.Q.
➤ Wind power ; Other renewable energies	AMS-I.D.
➤ Wind power, PV	AMS-I.D.

## (b) or (c) applied

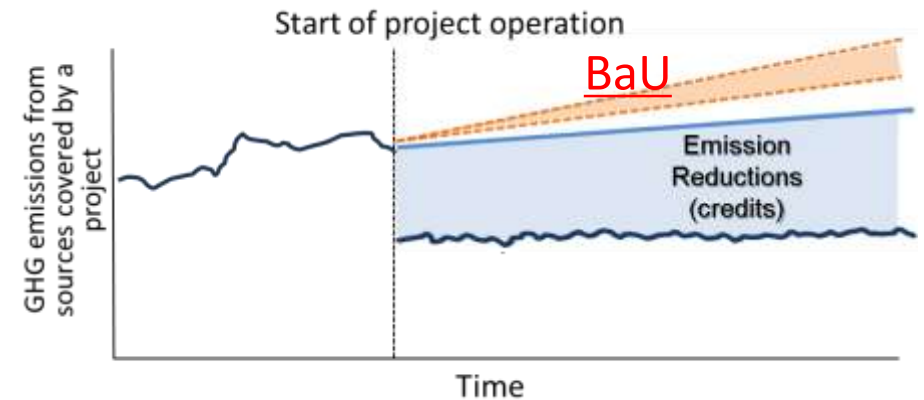
Project type	Project type
➤ Biomass	➤ Material use
➤ Hydro power	➤ Afforestation & reforestation
➤ Biogas	➤ Fuel switch
➤ Wind power	➤ Methane recovery & utilization ; Transportation
➤ PV	➤ Hydro power ; Other renewable energies
➤ Methane avoidance	➤ Waste gas/heat utilization ; Fuel switch
➤ Methane recovery & utilization	➤ Energy efficiency ; Biogas
➤ Energy efficiency	➤ Biogas ; Biomass
➤ Waste gas/heat utilization	➤ Energy efficiency ; Fuel switch
➤ Wind power, PV	➤ Waste gas/heat utilization ; Energy efficiency
➤ Wind power ; Other renewable energies	➤ Transportation
➤ Other renewable energies	
➤ HFC reduction/avoidance	

# Baseline approaches under the JCM



- In the JCM, baselines should be below BaU.
- Baseline approach in the JCM is positive list (32.4%), performance (30.4%), bench mark (27.5%).

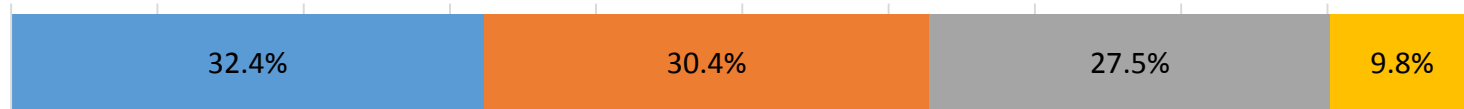
- In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions.
- The reference emissions are calculated below business-as-usual (BaU) emissions which represent plausible emissions in providing the same outputs or service level of the 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. (Positive list)
(2')	Based on data with good carbon efficiency from the latest past data of existing or similar equipment. (Performance)
(3')	Based on the target standard and the efficiency set to exceed the currently feasible efficiency (Bench mark)

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

Approved JCM methodologies



■ (1') ■ (2') ■ (3') ■ Unclassified

Total:102

# Baseline approaches in VCS



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

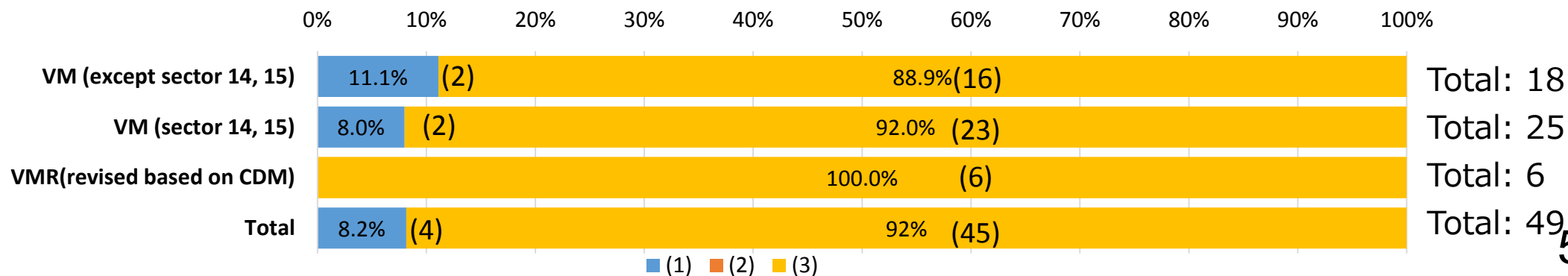
*“A project activity is additional if it can be demonstrated that the activity results in emission reductions or removals that are in excess of what would be achieved **under a “business-as-usual” scenario** and the activity would not have occurred in the absence of the incentive provided by the carbon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

- VCS allows to use 2 types of standardized methods, **Performance method** and **Activity methods**, and also to use other BL approaches depending on each project types .

## Types of baseline approaches

(1)	<b>Performance method:</b> 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.
(2)	<b>Activity method (positive list):</b> "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."
(3)	<b>Project method / Others / Unclassified</b>

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



# Draft text on Article 6, paragraph 4



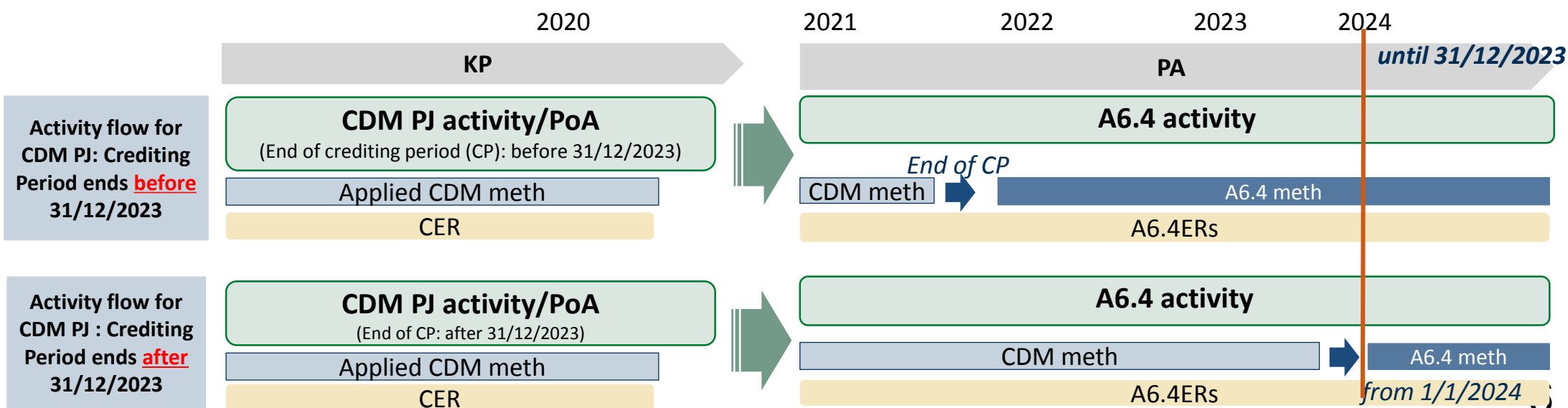
## Draft text on Article 6, paragraph 4, ver.3)

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:

- 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;
- 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);

73. Where an activity is eligible for transition pursuant to paragraph 72 above:

- The transition shall have been completed by no later than 31 December 2023;
- It may continue to apply its current approved CDM methodology until the earlier of the end of its current crediting period or 31 December 2023, following which, it shall apply an approved methodology pursuant to chapter V. B (Methodologies);
- For CDM project activities and CDM programmes of activities that have transitioned, A6.4ERs may be issued for emission reductions achieved after 31 December 2020.



# Number of CDM projects subject to consideration



- Out of registered PAs and CPAs (PAs: 7,857, CPAs: 2,674), 2,198 PAs and 2,340 CPAs may renew under the 64

As of February 2021

Reflecting the EB decision regarding CP renewal

<b>Registered PAs / CPAs (PAs: 7,857, CPAs: 2,674)</b>			
<b>Current crediting period ends after 1/1/2021</b>			
<ul style="list-style-type: none"> <li>➤ PAs: 3,644</li> <li>➤ CPAs: 2,662</li> </ul>			
<b>Current crediting period ends before 31/12/2023</b>		<b>Current crediting period ends after 1/1/2024</b>	
<ul style="list-style-type: none"> <li>➤ PAs: 2,095</li> <li>➤ CPAs: 593</li> </ul>		<ul style="list-style-type: none"> <li>➤ PAs: 1,549</li> <li>➤ CPAs: 2,069</li> </ul>	
<b>Crediting period is fixed or Third crediting period</b>	<b>Crediting period is renewable</b>		
<ul style="list-style-type: none"> <li>➤ PAs: 1,446</li> <li>➤ CPAs: 322</li> </ul>	<ul style="list-style-type: none"> <li>➤ PAs: 649</li> <li>➤ CPAs: 271</li> </ul>		
		<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>PAs: 2,198</b>  <b>CPAs: 2,340</b> </div>	



# Analyzing CDM methodologies (PAs)



	Methodology	CDM CP ends on or after 1 Jan 2024	CP is renewable beyond current CP	Total	Accumulate
ACM0002	Grid-connected electricity generation from renewable sources	936	356	1,292	58.8%
AMS-I.D.	Grid connected renewable electricity generation	283	179	462	79.8%
ACM0001	Flaring or use of landfill gas	46	27	73	83.1%
AMS-I.C.	Thermal energy production with or without electricity	31	7	38	84.8%
ACM0006	Electricity and heat generation from biomass	10	8	18	85.7%
ACM0018	Electricity generation from biomass in power-only plants	17	1	18	86.5%
AR-AMS0001	Simplified baseline and monitoring methodologies for small-scale A/R CDM project activities implemented on grasslands or croplands with limited displacement of pre-project activities	16	1	17	87.3%
ACM0012	Waste energy recovery	15	1	16	88.0%
AMS-I.E.	Switch from non-renewable biomass for thermal applications by the user	5	8	13	88.6%
AMS-II.E.	Energy efficiency and fuel switching measures for buildings	12	0	12	89.1%
Others	-	178	61	239	100.0%
<b>Total</b>	<b>-</b>	<b>1,549</b>	<b>649</b>	<b>2,198</b>	

# Analyzing CDM methodologies (CPAs)



	Methodology	CDM CP ends on or after 1 Jan 2024	CP is renewable beyond current CP	Total	Accumulate
AMS-III.D.	Methane recovery in animal manure management systems	1,087	2	1,089	46.5%
AMS-II.G.	Energy efficiency measures in thermal applications of non-renewable biomass	456	88	544	69.8%
AMS-III.AV.	Low greenhouse gas emitting safe drinking water production systems	117	16	133	75.5%
ACM0002	Grid-connected electricity generation from renewable sources	56	65	121	80.6%
AMS-I.D.	Grid Connected Renewable Electricity Generation	67	38	105	85.1%
AMS-I.E.	Switch from non-renewable biomass for thermal applications by the user	61	29	90	89.0%
AMS-II.J.	Demand-side activities for efficient lighting technologies	63	0	63	91.7%
AMS-I.C.	Thermal energy production with or without electricity	47	4	51	93.8%
AMS-I.A.	Electricity generation by the user	16	4	20	94.7%
AMS-I.F.	Renewable electricity generation for captive use and mini-grid	8	11	19	95.5%
Others	-	91	14	105	100.0%
Total	-	2,069	271	2,340	

# Defining baseline approaches



- Need to define each baseline approach in 6.4 RMP in organized manner, taking into account the experience of the CDM and other mechanisms.
- How to operationalize them would be further elaborated by Supervisory Body

## Details in text

### ◆ Menu or hierarchy?

- From the experience of CDM and other mechanisms, in actual, multiple baseline approaches are applied according to the type of project and various circumstances.

### ◆ **Streamline of Performance approach:** The current draft texts are mixture of several definitions. It is needed to streamline each definition by considering the experience of CDM and other mechanisms. It may also be useful to consider how BAT and benchmark concept could be incorporated in performance approach.

### ◆ **BAU, Historical, and Projected emissions**

- Can we consider applying conservative baseline emission calculation in the design of the 64 mechanism?

# Idea for the revision of ACM0002



- This methodology applies to project activities that include retrofitting, rehabilitation (or refurbishment), replacement or capacity addition of an existing power plant or construction and operation of a Greenfield power plant.

Applied approach		Baseline emissions
CDM	a. Actual or historical emissions, or	$BE = EG \times EF$ <ul style="list-style-type: none"> <li>● The baseline emissions are calculated as above.</li> <li>● A Combined Margin (CM) is applied to the emission factor for electricity as described in "TOOL07: Tool to calculate the emission factor (EF)".</li> </ul>
	b. Economically attractive technology	



(Approaches in slide 1)

A64	Best Available Technology	<ul style="list-style-type: none"> <li>● <u>Determine the best available technology</u> (e.g., high-efficient combined cycle gas turbine) <u>at host country level.</u></li> <li>● Determine an emission factor based on the BAT and use it for the calculation of baseline emissions.</li> </ul>
	Performance-based (1)	<ul style="list-style-type: none"> <li>● Calculate a emission factor using the recent data, and use <u>low carbon-intensive emission factor.</u></li> </ul>
	Performance-based (2)	<ul style="list-style-type: none"> <li>● Same as Performance-based (1)</li> </ul>
	Performance-based (3)	<ul style="list-style-type: none"> <li>● Calculate a emission factor using the recent data.</li> <li>● Use <u>the lowest carbon-intensive emission factor</u> among the <u>three years.</u></li> </ul>
	Benchmark	<ul style="list-style-type: none"> <li>● <u>Determine a benchmark emission factor at host country level</u> and use it for the calculation of baseline emissions.</li> </ul>
	Projected / historical / BAU	<ul style="list-style-type: none"> <li>● <u>Review parameters in conservative manner</u></li> </ul>