



CDM Transition – CER Availability

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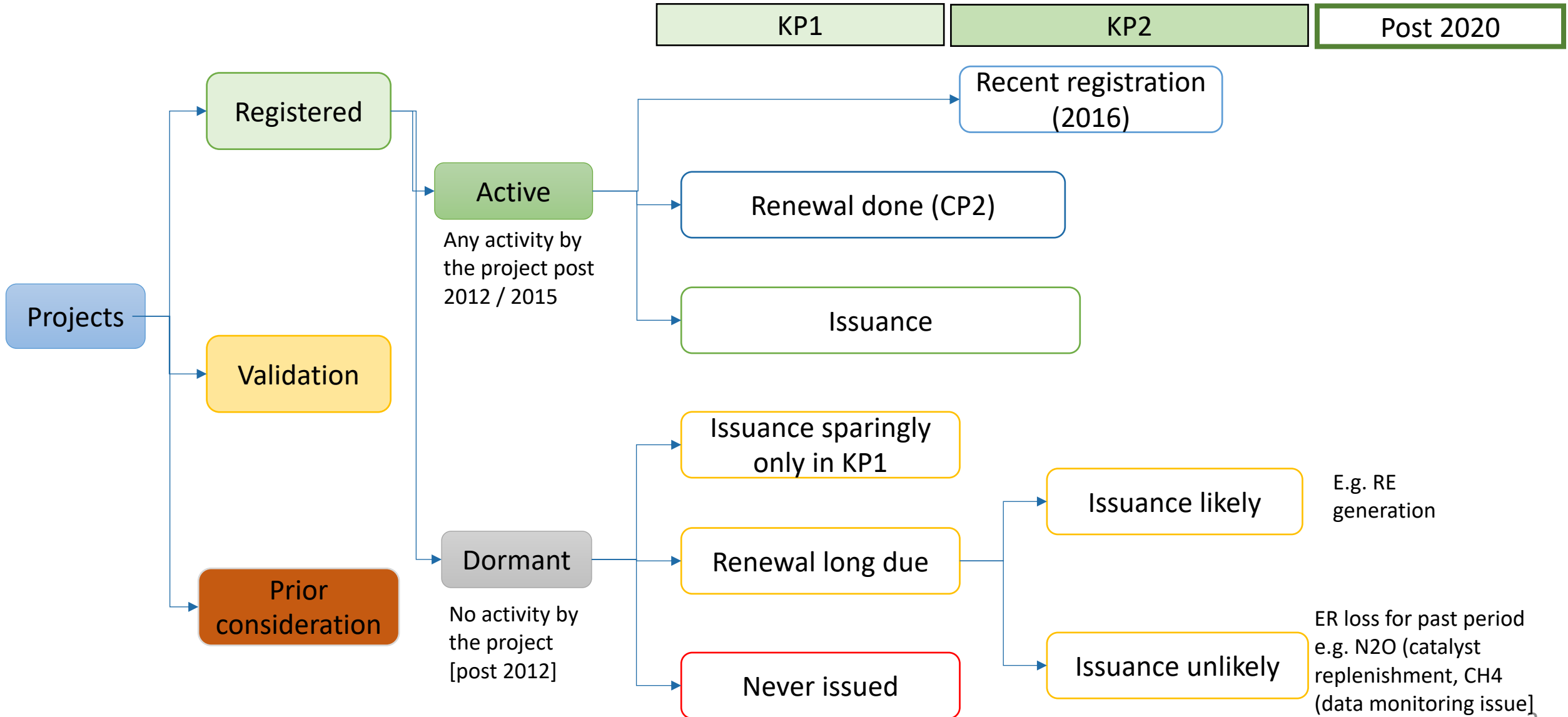
Roundtable on
Climate Change and
Sustainable Transition

Basis of estimation of potential certified emission reductions (CERs)

- Primary data-set – UNFCCC CDM
- Secondary data-set – Existing compilation
 - UNFCCC database for PAs and PoAs
 - UNEP DTU CDM pipeline
 - IGES CDM database

This database has been used in the analysis

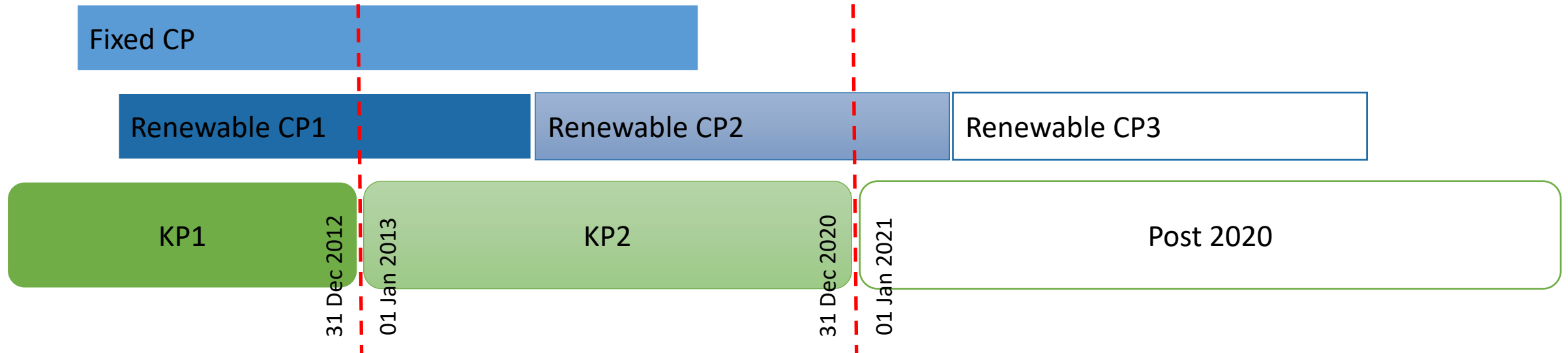
Categorization of projects



Classification of registered projects

- **Active projects:** These are projects which have had been active post- 2012 (KP2), either through the issuance of CERs from the projects, renewal of crediting periods or recent registration of the project (post 2015).
- **Dormant projects:** These are the remaining projects which despite having been registered for a long time
 - Have never issued CERs,
 - Issued only sparingly in pre 2012 (KP1) period,
 - And/or have a long due renewal of their crediting period.

Straddling of crediting periods and KP periods



Uncertainty in issuance of CERs

The possibility of issuance of CERs from the dormant registered projects is reduced due to a number of factors, including:

- Project is not being implemented – No CERs would originate from such projects.
- Delay in commissioning – effectively reducing the crediting period.
- Change of design – may result in the methodology applied for monitoring and quantification of ERs not being relevant or applicable anymore.
- Renewal of crediting period – Missing the deadline and therefore renewal and future crediting period not possible anymore
- Lack of monitoring – Loss of data for quantifying CERs.

Exclusion of projects

Certain types of projects have further been excluded from the analysis as follows:

- Industrial gases: projects such as HFC23 and N2O
- Large hydro: projects above 15 MW
- Forestry: Afforestation/Reforestation projects (A/R projects)

Analysis of projects

Certainty

- Ex-ante projection (CP1)

Uncertainty

- Issuance rate
- Renewal of CP

Exclusion

- HFC23
- N2O
- Large hydro
- Forestry

Ex ante estimate of potential CER supply from registered projects across regions

The ex-ante estimate of CER supply from registered projects based on numbers provided in the PDDs is about 14.4 billion tCO₂e

Region/Country/Grouping	Qualifier	KP1	KP2	Post 2020	Total
AILAC	Independent Alliance of Latin America and the Caribbean	0.067	0.249	0.327	0.643
Arab States	22 member states	0.036	0.103	0.063	0.202
Brazil	-	0.143	0.331	0.429	0.903
China	-	1.301	3.532	2.557	7.390
India	-	0.265	0.760	0.580	1.605
Least Developed Countries (LDC)	48 Parties	0.007	0.222	0.695	0.924
Small Island Developing States (SIDS)	40 low-lying islands	0.007	0.078	0.135	0.220
Rest of the World (RoW)	All other remaining countries	0.364	1.101	1.038	2.502
Total		2.189	6.376	5.823	14.389

Note: The numbers under the columns KP1, KP2, Post 2020 and Total are values in billion tCO₂e

Ex ante estimate of potential CER supply from registered projects across methodologies

Methodology	Brief	Count of projects	KP1	KP2	Post 2020	Total	% ER share	% count share
ACM0002	Grid connected RE (no biomass)	3357	0.548	3.121	3.146	6.815	52.95%	38.54%
ACM0001	Landfill gas	245	0.596	0.361	0.166	1.123	8.73%	2.81%
AM0001	HFC23	20	0.483	0.142	0.007	0.631	4.91%	0.23%
AMS-I.D.	Grid connected RE	2061	0.090	0.250	0.151	0.491	3.81%	23.66%
AM0021	N2O	4	0.163	0.252	0.240	0.655	5.09%	0.05%
ACM0025	Natural gas power plant	66	0.065	0.262	0.097	0.425	3.30%	0.76%
ACM0008	Coal mine methane	91	0.067	0.230	0.113	0.410	3.19%	1.04%
ACM0012	Waste heat recovery	293	0.115	0.250	0.039	0.404	3.14%	3.36%
AM0034	N2O	52	0.047	0.068	0.029	0.143	1.11%	0.60%
ACM0006	Biomass	160	0.037	0.070	0.043	0.149	1.16%	1.84%
AM0028	N2O	17	0.036	0.060	0.047	0.143	1.11%	0.20%
ACM0022	Alternative waste mgmt.	79	0.006	0.055	0.023	0.084	0.65%	0.91%
ACM0013	Less intensive fossil fuel fired power plant	11	0.005	0.066	0.018	0.089	0.69%	0.13%
AMS-I.C	RE thermal	220	0.012	0.044	0.011	0.067	0.52%	2.53%
ACM0019	N2O	26	0.001	0.039	0.035	0.075	0.58%	0.30%
ACM0010	AWMS	60	0.029	0.018	0.002	0.049	0.38%	1%
Total		6762	2.300	5.285	4.167	11.752	91%	78%

Ex ante estimate of usable potential CER supply from registered projects across regions

Excluding the industrial gases (HFC23, N2O), large hydro (> 15 MW) and forestry projects, reduces the available credits by about 5 billion tCO2e

Region/Country/Grouping	KP1	KP2	Post 2020	Total
AILAC	0.043	0.149	0.163	0.355
Arab States	0.029	0.083	0.049	0.160
Brazil	0.093	0.174	0.261	0.527
China	0.600	2.279	1.542	4.422
India	0.173	0.594	0.478	1.245
LDC	0.005	0.145	0.583	0.734
SIDS	0.007	0.020	0.026	0.053
RoW	0.216	0.840	0.790	1.846
Total usable credits	1.166	4.284	3.892	9.342

Ex ante estimate of potential usable CER supply from projects registered after 2012

Furthermore, if the criteria of registration of the projects post 2013 or 2016 is imposed, the supply of ERs drop significantly with reduced activity post 2012

Description	Qualifier	KP1	KP2	Post 2020	Total
Registered projects	PA (679), PoA (586 CPAs)	0.003 (A/R projects)	0.519	1.279	1.800
Exclusion	HFC, N2O, Large hydro, A/R	(0.003)	(0.134)	(0.257)	(0.393)
Total Usable credits		0	0.385	1.022	1.407

Ex ante estimate of potential CER supply from projects registered after 2015

Description	Qualifier	KP1	KP2	Post 2020	Total
Registered projects	PA (136), PoA (162 CPAs)	0	0.090	0.525	0.615
Exclusion	HFC, N2O, Large hydro, A/R	(0)	(0.023)	(0.075)	(0.098)
Total Usable credits		0	0.067	0.450	0.516

Ex post issuance of CERs

There has been issuance of about 2 billion tCO₂e so far and majority coming from only about a fifth of the projects from HFC23, N₂O and large hydro

Region/Country/Grouping	KP1	KP2	Total
AILAC	0.040	0.030	0.070
Arab States	0.023	0.013	0.036
Brazil	0.096	0.061	0.096
China	0.874	0.233	1.107
India	0.199	0.060	0.259
LDC	0.002	0.044	0.047
SIDS	0.000	0.001	0.001
RoW	0.245	0.160	0.406
Total	1.480	0.603	2.082

Comparison of ex-ante forecast and ex-post actual CER issuances across regions

Region/Country/Grouping	KP1 + KP2 (Ex-ante estimate)	KP1 + KP2 (Ex-post issuance)	% issuance of estimate
AILAC	0.316	0.070	22%
Arab States	0.139	0.036	26%
Brazil	0.474	0.096	20%
China	4.833	1.107	23%
India	1.025	0.259	25%
LDC	0.229	0.047	20%
SIDS	0.084	0.001	1%
RoW	1.465	0.406	28%
Total	8.565	2.082	24%

Comparison of ex-ante forecast and ex-post actual CER issuances of usable projects across regions

Region/Country/Grouping	KP1 + KP2 (Ex-ante estimate)	KP1 + KP2 (Ex-post issuance)	% issuance of estimate
AILAC	0.192	0.039	20%
Arab States	0.112	0.017	15%
Brazil	0.267	0.075	28%
China	2.880	0.423	15%
India	0.767	0.138	18%
LDC	0.151	0.001	1%
SIDS	0.027	0.000	0%
RoW	1.056	0.195	18%
Total usable credits	5.450	0.888	16%

Comparison of ex-ante forecast and ex-post actual CER issuances

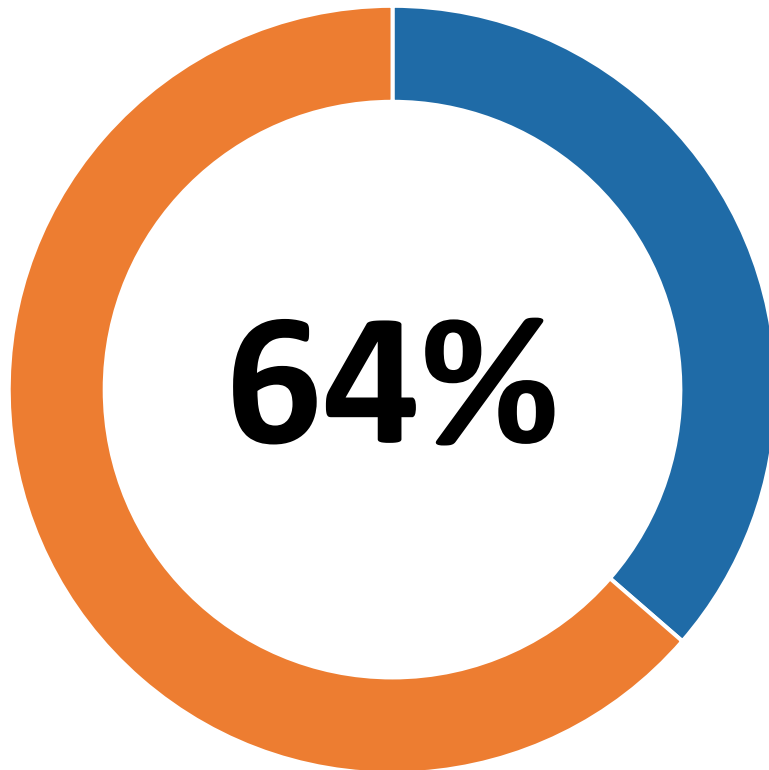
The summary of the comparison

Description	KP1 + KP2 (Ex-ante estimate)	KP1 + KP2 (Ex-post issuance)	% issuance of estimate
All projects	8.565	2.082	24%
Exclusion - HFC23 + N2O + Large hydro + A/R (Unusable)	3.116	1.194	38%
Usable credits	5.450	0.888	16%
Usable ratio	64%	43%	

Comparison of ex-ante forecast and ex-post actual CER issuances

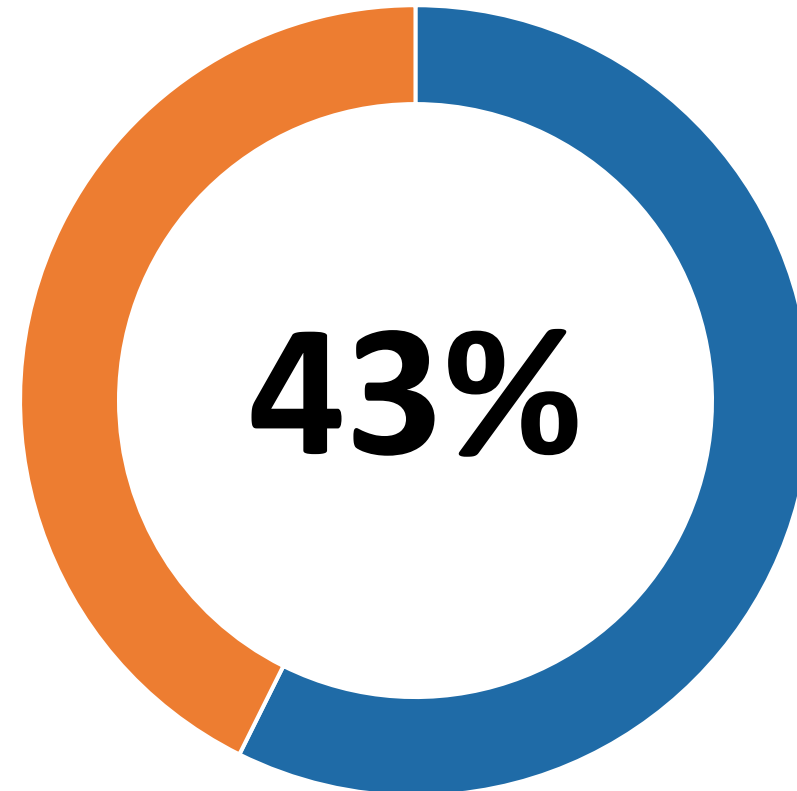
Usable Ratio

Ex-ante estimate



■ HFC23 + N2O + Large hydro + A/R ■ Usable credits

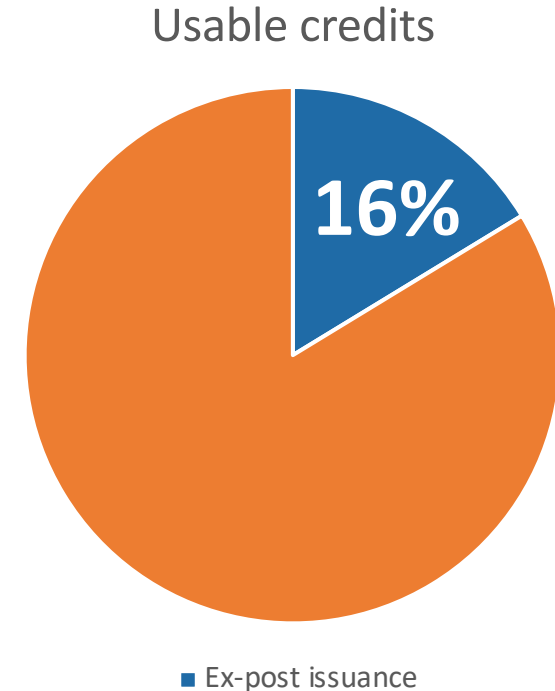
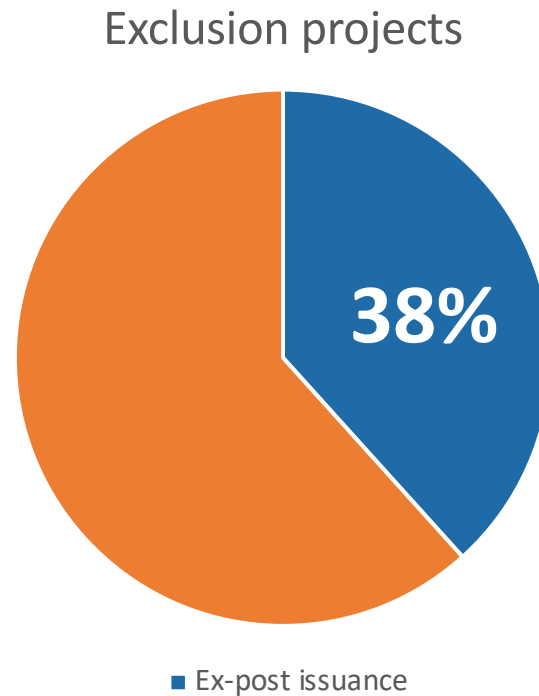
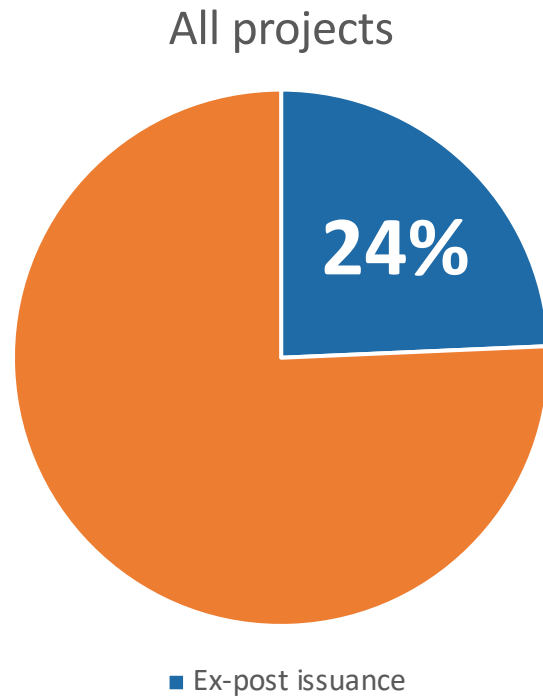
Ex-post estimate



■ HFC23 + N2O + Large hydro + A/R ■ Usable credits

Comparison of ex-ante forecast and ex-post actual CER issuances

% issuance of estimate



Issuance ratio for projects under KP1 and KP2

It can be observed that of the forecast of 8.56 billion tCO2e for KP1 and KP2 only 2.08 billion tCO2e has been issued, of which only 43% pertains to usable credits

Description	KP1	KP2	KP1 + KP2
Registered projects	68%	9%	24%
HFC23	105%	23%	86%
N2O	103%	24%	53%
Large hydro	61%	7%	16%
Forestry	78%	23%	49%