

Module

VMD0049

ACTIVITY METHOD FOR ELECTRIC VEHICLE CHARGING SYSTEMS

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Sectoral Scope 1 and 7: Energy and Transport

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1 SUMMARY DESCRIPTION

This module provides the positive list and criteria for activities that are deemed additional under the VCS methodology *VM0038 Electric Vehicle Charging Systems*.

The positive list is developed based on electric vehicle (EV) stock shares and three-year average sales of light-duty vehicles (LDVs) and heavy-duty vehicles (HDVs). For LDVs, separate positive lists are established for AC and DC charging systems.

2 SOURCES

This module is based on the following module:

- *VMD0049 Activity Method for Determining Additionality of Electric Vehicle Charging Systems v1.0*

3 DEFINITIONS

Same as VM0038 Electric Vehicle Charging Systems

4 APPLICABILITY CONDITIONS

This module applies to project activities which install EV charging systems, including their associated infrastructure, in order to charge EV applicable fleets. GHG emission reductions are achieved through the displacement of conventional fossil fuel vehicles used for passenger and freight transportation as a result of the availability of project charging infrastructure which delivers electricity to EVs.

For both light-duty vehicle (LDV) and heavy-duty vehicle (HDV) projects, this module is applicable under the following conditions:

- 1) For LDV, the project is located in a region/country listed as “Yes” in Table 1 below for the relevant charger type (DCFC or AC L1/L2). These are the regions for which activity penetration of EVs has been demonstrated to be less than 5 percent (applicable to DCFC) or 2.5 percent (applicable to AC chargers) of existing stock, or where data on

stock share is not available, less than 20 percent (for DCFC) or 10 percent (for AC chargers) of three-year average annual sales.

Table 1: List of Countries and Applicable LDV EV Chargers

Region/country	Share	Year	Value (%) ¹	DCFC (<5% stock or <20% sales)	AC L1/L2 (<2.5% stock or <10% sales)
Viet Nam	EV stock share	2024	4.6	Yes	No
France	EV stock share	2024	4.4	Yes	No
Canada	EV stock share	2024	4.2	Yes	No
Portugal	EV stock share	2024	4.2	Yes	No
New Zealand	EV stock share	2024	3.3	Yes	No
Korea	EV stock share	2024	2.8	Yes	No
USA	EV stock share	2024	2.7	Yes	No
Australia	EV stock share	2024	1.9	Yes	Yes
Costa Rica	EV stock share	2024	1.9	Yes	Yes
Spain	EV stock share	2024	1.8	Yes	Yes
Italy	EV stock share	2024	1.5	Yes	Yes
Turkiye	EV stock share	2024	1.4	Yes	Yes
Thailand	EV stock share	2024	1.2	Yes	Yes
Greece	EV stock share	2024	1.2	Yes	Yes
Poland	EV stock share	2024	1.1	Yes	Yes
Japan	EV stock share	2024	1.0	Yes	Yes
Uzbekistan	EV stock share	2024	0.87	Yes	Yes
Colombia	EV stock share	2024	0.79	Yes	Yes
Brazil	EV stock share	2024	0.7	Yes	Yes
Central and South America	EV stock share	2024	0.61	Yes	Yes
Indonesia	EV stock share	2024	0.59	Yes	Yes
Malaysia	EV stock share	2024	0.5	Yes	Yes
India	EV stock share	2024	0.48	Yes	Yes
Mexico	EV stock share	2024	0.3	Yes	Yes
Chile	EV stock share	2024	0.26	Yes	Yes
Middle East and Caspian	EV stock share	2024	0.15	Yes	Yes
South Africa	EV stock share	2024	0.066	Yes	Yes
Africa	EV stock share	2024	0.054	Yes	Yes
Hungary	EV sales share	2022-2024	10.5	Yes	No
Latvia	EV sales share	2022-2024	10.4	Yes	No
Lithuania	EV sales share	2022-2024	10.3	Yes	No
Romania	EV sales share	2022-2024	8.8	Yes	Yes

¹ International Energy Agency (2025), *Global EV Outlook 2025*

Cyprus	EV sales share	2022-2024	8.7	Yes	Yes
Slovenia	EV sales share	2022-2024	8.4	Yes	Yes
Estonia	EV sales share	2022-2024	8.1	Yes	Yes
Czech Republic	EV sales share	2022-2024	5.4	Yes	Yes
Bulgaria	EV sales share	2022-2024	4.9	Yes	Yes
Slovakia	EV sales share	2022-2024	4.9	Yes	Yes
Croatia	EV sales share	2022-2024	4.8	Yes	Yes
Seychelles	EV sales share	2022-2024	3.4	Yes	Yes

- 2) For HDV, the project is located in a region/country listed in Table 2 below for the relevant vehicle type (buses or trucks). These are the regions for which activity penetration of EVs has been demonstrated to be less than 2.5 percent (for buses) or 5 percent (for trucks) of existing stock, or where data on stock share is not available, less than 10 percent (for buses) or 20 percent (for trucks) of three-year average annual sales.

Table 2: List of Countries and Applicable HDV EV Fleets

Region/country	Parameter	Year	HDV type	Value (%)
Italy	EV stock share	2024	Buses	2.2
Poland	EV stock share	2024	Buses	2.2
Korea	EV stock share	2024	Buses	1.6
USA	EV stock share	2024	Buses	1.1
New Zealand	EV stock share	2024	Buses	1
North America	EV stock share	2024	Buses	0.88
India	EV stock share	2024	Buses	0.61
Central and South America	EV stock share	2024	Buses	0.42
Middle East and Caspian	EV stock share	2024	Buses	0.061
Malaysia	EV stock share	2024	Buses	0.025
South Africa	EV stock share	2024	Buses	0.0085
Africa	EV stock share	2024	Buses	0.0075
Turkiye	EV stock share	2024	Buses	0.0035
Norway	EV stock share	2024	Trucks	2.3
Switzerland	EV stock share	2024	Trucks	2.3
Denmark	EV stock share	2024	Trucks	2.2
Netherlands	EV stock share	2024	Trucks	1.4
China	EV stock share	2024	Trucks	1.2
Sweden	EV stock share	2024	Trucks	1.1
Germany	EV stock share	2024	Trucks	0.92
France	EV stock share	2024	Trucks	0.85
Asia Pacific	EV stock share	2024	Trucks	0.78
United Kingdom	EV stock share	2024	Trucks	0.55

Canada	EV stock share	2024	Trucks	0.44
Finland	EV stock share	2024	Trucks	0.19
Spain	EV stock share	2024	Trucks	0.17
South Africa	EV stock share	2024	Trucks	0.06
Central and South America	EV stock share	2024	Trucks	0.05
Japan	EV stock share	2024	Trucks	0.017
Africa	EV stock share	2024	Trucks	0.0089
North America	EV stock share	2024	Trucks	0.0015
Middle East and Caspian	EV stock share	2024	Trucks	0.0012
Malaysia	EV stock share	2024	Trucks	0.00016
Indonesia	EV stock share	2024	Trucks	0.000054
Uzbekistan	EV sales share	2022-2024	Buses	2.8

Where projects contain a combination of EV charging systems serving different applicable fleets (e.g., including both L1/L2 and DCFC systems), project proponents must assess a region's inclusion in the positive list for each of the project charging system's applicable fleets independently. For example, for LDV projects, project proponents must assess whether a region is included on the positive list separately for a combined BEV and PHEV applicable fleet (i.e., for the L1s/L2s), and for the BEV applicable fleet (i.e., for the DCFCs). Additionally, for HDV projects, project proponents must assess whether a region is included for e-buses and for e-trucks separately.

5 PROCEDURES

This positive list must be applied with the procedures and requirements to demonstrate additionality

6 REFERENCES

International Energy Agency (2025), *Global EV Outlook 2025*, <https://www.iea.org/reports/global-ev-outlook-2025>

International Energy Agency (2025), *Global EV Data Explorer*, <https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer>

US Department of Energy, *Alternative Fuels Data Center*, <https://afdc.energy.gov/transatlas#/?view=percent&fuel=ELEC&year=2023&state=CA>

Canada Natural Resources, *Electric Charging and Alternative Fueling Stations Locator*,
https://natural-resources.canada.ca/energy-efficiency/transportation-energy-efficiency/electric-charging-alternative-fuelling-stationslocator-map?_gl=1*_1xceriw*_ga*Mjc2MzA1Nzk5LjE3NjlyNjA4NDM.*_ga_C2N57Y7DX5*_czE3NjI1NDM5NDkkbz MkZzAkdDE3NjI1NDM5NDkka jYwJGwwJGgw#/find/nearest

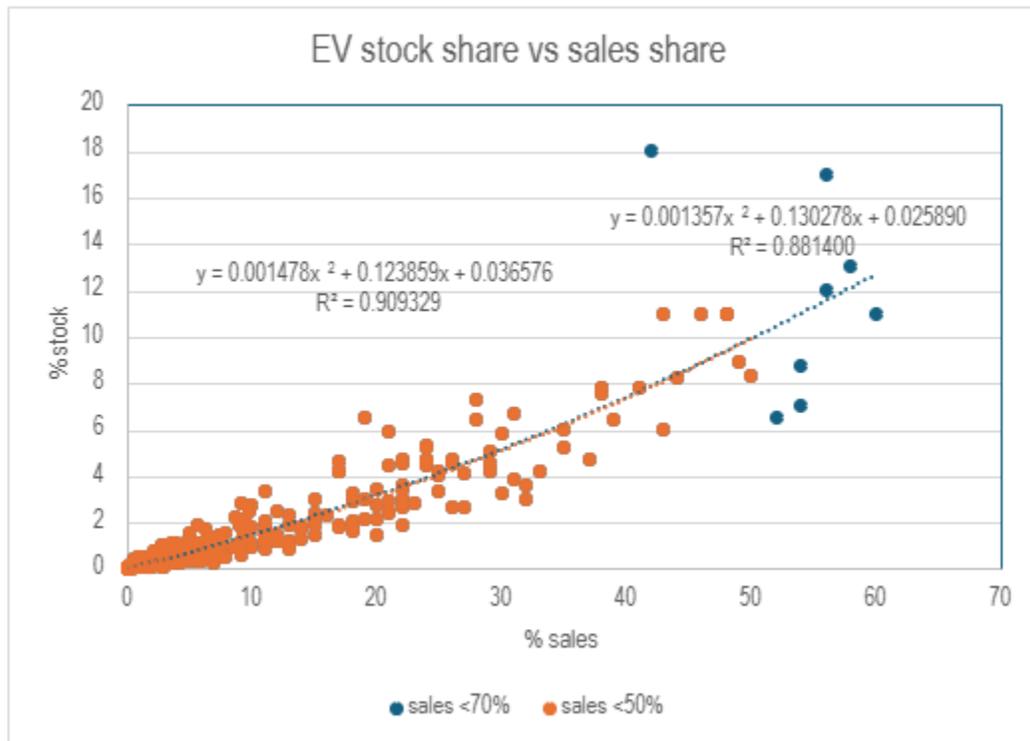
EU Alternative Fuels Observatory, <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road>

APPENDIX A: JUSTIFICATION OF THE ACTIVITY PENETRATION OPTION

The stock share of EVs was obtained from IEA EV Outlook. This is the most complete dataset worldwide.

For those regions where the stock of EVs is not available but there is information on the sales share, the latter was used as a proxy to determine the stock share.

A regression analysis was done with all the data available to correlate both metrics and arrive to an estimation. Two regressions were made with a quadratic fitting: one considering countries up to 70% sales share and another one based on countries up to 50% sales share. Both results were very similar with a correlation coefficient between 0.88 and 0.91.



In the case of LDV, a threshold of 5% stock share was used for DCFC. DCFC are expected to encourage further EV adoption since they enable the use of EVs for longer distances, replacing the need for a fossil fuel car. AC chargers are more common in earlier stages, and as such, a threshold on 2.5% stock share was adopted.

In the case of HDV, they require DCFC given the size of the battery. Buses tend to have a more stable and predictable route, generally moving from one point to another and returning to the point of origin.

This predictability makes EV buses evolve faster than trucks. Therefore, a lower threshold was used for buses, determined at 2.5% stock share, and 5% applied to trucks.

RESULTS, DATA SOURCES AND VARIABILITY

Light Duty Electric Vehicles

National Assessment – Stock share

Region/country	parameter	year	Value (%)
Norway	EV stock share	2024	32
Iceland	EV stock share	2024	18
Denmark	EV stock share	2024	17
Sweden	EV stock share	2024	13
Belgium	EV stock share	2024	11
China	EV stock share	2024	11
Netherlands	EV stock share	2024	11
Finland	EV stock share	2024	8.3
Switzerland	EV stock share	2024	7.3
Asia Pacific	EV stock share	2024	6.7
Germany	EV stock share	2024	6.5
United Kingdom	EV stock share	2024	6.4
Israel	EV stock share	2024	5.9
Austria	EV stock share	2024	5.3
Europe	EV stock share	2024	4.7
Viet Nam	EV stock share	2024	4.6
World	EV stock share	2024	4.5
EU27	EV stock share	2024	4.4
France	EV stock share	2024	4.4
Canada	EV stock share	2024	4.2
Portugal	EV stock share	2024	4.2
New Zealand	EV stock share	2024	3.3
Korea	EV stock share	2024	2.8
USA	EV stock share	2024	2.7
North America	EV stock share	2024	2.5
Australia	EV stock share	2024	1.9
Costa Rica	EV stock share	2024	1.9
Spain	EV stock share	2024	1.8
Italy	EV stock share	2024	1.5
Turkiye	EV stock share	2024	1.4
Greece	EV stock share	2024	1.2
Thailand	EV stock share	2024	1.2
Poland	EV stock share	2024	1.1

Japan	EV stock share	2024	1
Uzbekistan	EV stock share	2024	0.87
Colombia	EV stock share	2024	0.79
Brazil	EV stock share	2024	0.7
Central and South America	EV stock share	2024	0.61
Indonesia	EV stock share	2024	0.59
Rest of the world	EV stock share	2024	0.56
Malaysia	EV stock share	2024	0.5
India	EV stock share	2024	0.48
Mexico	EV stock share	2024	0.3
Chile	EV stock share	2024	0.26
Middle East and Caspian	EV stock share	2024	0.15
Russia	EV stock share	2024	0.096
South Africa	EV stock share	2024	0.066
Africa	EV stock share	2024	0.054

National Assessment – Sales share

Region/country	parameter	2022	2023	2024	EV sales share
					3-year average (%)
Norway	EV sales share	89	90	92	90.3
Iceland	EV sales share	69	71	42	60.7
Sweden	EV sales share	54	60	58	57.3
Finland	EV sales share	37	54	50	47.0
Denmark	EV sales share	38	46	56	46.7
Netherlands	EV sales share	35	44	48	42.3
China	EV sales share	29	38	48	38.3
Belgium	EV sales share	26	41	43	36.7
Luxembourg	EV sales share	24	32	36	30.7
Portugal	EV sales share	22	32	33	29.0
Switzerland	EV sales share	25	30	28	27.7
United Kingdom	EV sales share	23	24	28	25.0
Asia Pacific	EV sales share	19	24	31	24.7
Germany	EV sales share	31	24	19	24.7
Ireland	EV sales share	22	27	25	24.7
Austria	EV sales share	22	27	24	24.3
France	EV sales share	20	25	24	23.0
Europe	EV sales share	21	22	22	21.7
EU27	EV sales share	21	22	21	21.3
New Zealand	EV sales share	18	27	11	18.7

World	EV sales share	15	18	22	18.3
Israel	EV sales share	12	17	21	16.7
Canada	EV sales share	9.5	13	17	13.2
Costa Rica	EV sales share	7.6	13	15	11.9
Greece	EV sales share	7.9	13	12	11.0
Spain	EV sales share	8.9	12	11	10.6
Hungary	EV sales share	8.6	11	12	10.5
Latvia	EV sales share	8.1	11	12	10.4
Lithuania	EV sales share	7.9	11	12	10.3
Australia	EV sales share	5	12	13	10.0
Viet Nam	EV sales share	2.5	9.8	17	9.8
Korea	EV sales share	9.6	8.7	9.2	9.2
USA	EV sales share	7.4	9.5	10	9.0
Romania	EV sales share	9	11	6.5	8.8
Thailand	EV sales share	2.3	11	13	8.8
Cyprus	EV sales share	5.4	8.8	12	8.7
Italy	EV sales share	8.5	9.2	7.9	8.5
North America	EV sales share	7	8.9	9.7	8.5
Slovenia	EV sales share	6.2	11	8.1	8.4
Estonia	EV sales share	5.4	8.8	10	8.1
Turkiye	EV sales share	1.3	7.2	11	6.5
Poland	EV sales share	5.9	6.4	5.7	6.0
Czech Republic	EV sales share	3.9	5.4	6.8	5.4
Bulgaria	EV sales share	4	5.8	5	4.9
Slovakia	EV sales share	3.7	6.1	4.8	4.9
Croatia	EV sales share	5	4.6	4.9	4.8
Colombia	EV sales share	2.9	3.9	7.4	4.7
Indonesia	EV sales share	1.4	2.2	7.3	3.6
Uzbekistan	EV sales share		2.2	5	3.6
Brazil	EV sales share	1.2	3	6.4	3.5
Rest of the world	EV sales share	2.2	3.4	4.7	3.4
Seychelles	EV sales share	1.7	5		3.4
Central and South America	EV sales share	1.2	2.6	5.4	3.1
Japan	EV sales share	2.8	3.5	2.8	3.0
India	EV sales share	1.4	2.1	2.1	1.9
Malaysia	EV sales share	0.49	1.5	3.6	1.9
Mexico	EV sales share	0.96	1.5	2.2	1.6
Middle East and Caspian	EV sales share	0.15	0.62	2.7	1.2

Chile	EV sales share	0.6	0.75	2.1	1.2
Russia	EV sales share	0.13	0.22	2.9	1.1
South Africa	EV sales share	0.17	0.3	0.61	0.4
Africa	EV sales share	0.15	0.23	0.62	0.3

Heavy Duty Electric Vehicles

National Assessment – Stock share

Region/country	parameter	mode	year	Value (%)
China	EV stock share	Buses	2024	30
Netherlands	EV stock share	Buses	2024	21
Norway	EV stock share	Buses	2024	14
Denmark	EV stock share	Buses	2024	12
Asia Pacific	EV stock share	Buses	2024	11
Sweden	EV stock share	Buses	2024	10
Finland	EV stock share	Buses	2024	8.6
Belgium	EV stock share	Buses	2024	7.3
Switzerland	EV stock share	Buses	2024	4.9
United Kingdom	EV stock share	Buses	2024	4.9
World	EV stock share	Buses	2024	4.9
Israel	EV stock share	Buses	2024	4.7
Germany	EV stock share	Buses	2024	4.6
Portugal	EV stock share	Buses	2024	4.2
EU27	EV stock share	Buses	2024	3.7
Canada	EV stock share	Buses	2024	3.3
France	EV stock share	Buses	2024	2.8
Spain	EV stock share	Buses	2024	2.7
Norway	EV stock share	Trucks	2024	2.3
Switzerland	EV stock share	Trucks	2024	2.3
Denmark	EV stock share	Trucks	2024	2.2
Europe	EV stock share	Buses	2024	2.2
Italy	EV stock share	Buses	2024	2.2
Poland	EV stock share	Buses	2024	2.2
Korea	EV stock share	Buses	2024	1.6
Netherlands	EV stock share	Trucks	2024	1.4
China	EV stock share	Trucks	2024	1.2
Sweden	EV stock share	Trucks	2024	1.1
USA	EV stock share	Buses	2024	1.1
New Zealand	EV stock share	Buses	2024	1
Germany	EV stock share	Trucks	2024	0.92

North America	EV stock share	Buses	2024	0.88
France	EV stock share	Trucks	2024	0.85
Asia Pacific	EV stock share	Trucks	2024	0.78
India	EV stock share	Buses	2024	0.61
United Kingdom	EV stock share	Trucks	2024	0.55
World	EV stock share	Trucks	2024	0.5
EU27	EV stock share	Trucks	2024	0.45
Canada	EV stock share	Trucks	2024	0.44
Central and South America	EV stock share	Buses	2024	0.42
Europe	EV stock share	Trucks	2024	0.42
Finland	EV stock share	Trucks	2024	0.19
Spain	EV stock share	Trucks	2024	0.17
Rest of the world	EV stock share	Buses	2024	0.12
Middle East and Caspian	EV stock share	Buses	2024	0.061
South Africa	EV stock share	Trucks	2024	0.06
Central and South America	EV stock share	Trucks	2024	0.05
Malaysia	EV stock share	Buses	2024	0.025
Japan	EV stock share	Trucks	2024	0.017
Africa	EV stock share	Trucks	2024	0.0089
South Africa	EV stock share	Buses	2024	0.0085
Rest of the world	EV stock share	Trucks	2024	0.0076
Africa	EV stock share	Buses	2024	0.0075
Turkiye	EV stock share	Buses	2024	0.0035
North America	EV stock share	Trucks	2024	0.0015
Middle East and Caspian	EV stock share	Trucks	2024	0.0012
Malaysia	EV stock share	Trucks	2024	0.00016
Indonesia	EV stock share	Trucks	2024	0.000054

National Assessment – Sales share

Region/country	Parameter - Buses	2022	2023	2024	EV sales share 3-year average (%)
China	EV sales share	66	55	64	61.7
Finland	EV sales share	66	43	57	55.3
Norway	EV sales share	48	53	42	47.7
Netherlands	EV sales share	44	46	47	45.7
Denmark	EV sales share	32	20	73	41.7
Switzerland	EV sales share	20	65	27	37.3
Belgium	EV sales share	11	45	33	29.7

Sweden	EV sales share	16	25	32	24.3
Asia Pacific	EV sales share	20	14	20	18
Portugal	EV sales share	4.2	36	9.3	16.5
United Kingdom	EV sales share	7.6	18	23	16.2
Poland	EV sales share	21	19	8.4	16.1
EU27	EV sales share	12	15	18	15
Germany	EV sales share	13	15	16	14.7
France	EV sales share	14	13	11	12.7
Canada	EV sales share	6.8	24	5.9	12.2
Spain	EV sales share	8.1	13	15	12
Europe	EV sales share	9.3	11	13	11.1
Israel	EV sales share	10	9	12	10.3
Italy	EV sales share	3.7	8	18	9.9
New Zealand	EV sales share	6	5.4	6.6	6
India	EV sales share	6.7	4.2	5.7	5.5
Korea	EV sales share	3.8	5.4	6.5	5.2
North America	EV sales share	1	4.3	3.3	2.9
USA	EV sales share	1.1	4.6	2.8	2.8
Uzbekistan	EV sales share		3.5	2.1	2.8
Central and South America	EV sales share	2.2	2.9	1.1	2.1
Middle East and Caspian	EV sales share	0.57	0.28	0.4	0.4
South Africa	EV sales share	0.049	0.016	0.34	0.1
Africa	EV sales share	0.0025	0.028	0.008	0
Turkiye	EV sales share			0.0093	0

Region/country	Parameter - Trucks	2022	2023	2024	EV sales share 3-year average (%)
Norway	EV sales share	9.3	11	11	10.4
Switzerland	EV sales share	4.7	8.3	12	8.3
Denmark	EV sales share	2.1	6.4	9.3	5.9
Sweden	EV sales share	2.1	3.4	8	4.5
Netherlands	EV sales share	0.97	7.2	4.8	4.3
France	EV sales share	1.1	6.2	3.2	3.5
China	EV sales share	1.9	2.2	4.4	2.8
Germany	EV sales share	1.5	2.3	3.9	2.6
United Kingdom	EV sales share	1.1	2.8	3.6	2.5
EU27	EV sales share	0.79	2.3	2.4	1.8
Asia Pacific	EV sales share	1.1	1.3	2.7	1.7

Europe	EV sales share	0.8	2	2.3	1.7
Finland	EV sales share	0.57	1.9	1.8	1.4
Spain	EV sales share	0.9	1.5	1.2	1.2
Canada	EV sales share	0.6	1.3	1.2	1
South Africa	EV sales share		0.022	0.89	0.5
Central and South America	EV sales share	0.26	0.16	0.23	0.2
North America	EV sales share	0.046	0.21	0.19	0.1
Japan	EV sales share	0.0082	0.035	0.34	0.1
Africa	EV sales share		0.006	0.19	0.1
Middle East and Caspian	EV sales share		0.011	0.00021	0
Malaysia	EV sales share			0.003	0
Indonesia	EV sales share			0.0015	0

DOCUMENT HISTORY

Version	Date	Comment
v1.0	18 Sep 2018	Initial version
v2.0	18 Mar 2026 (draft)	Updated list of regions within the positive list