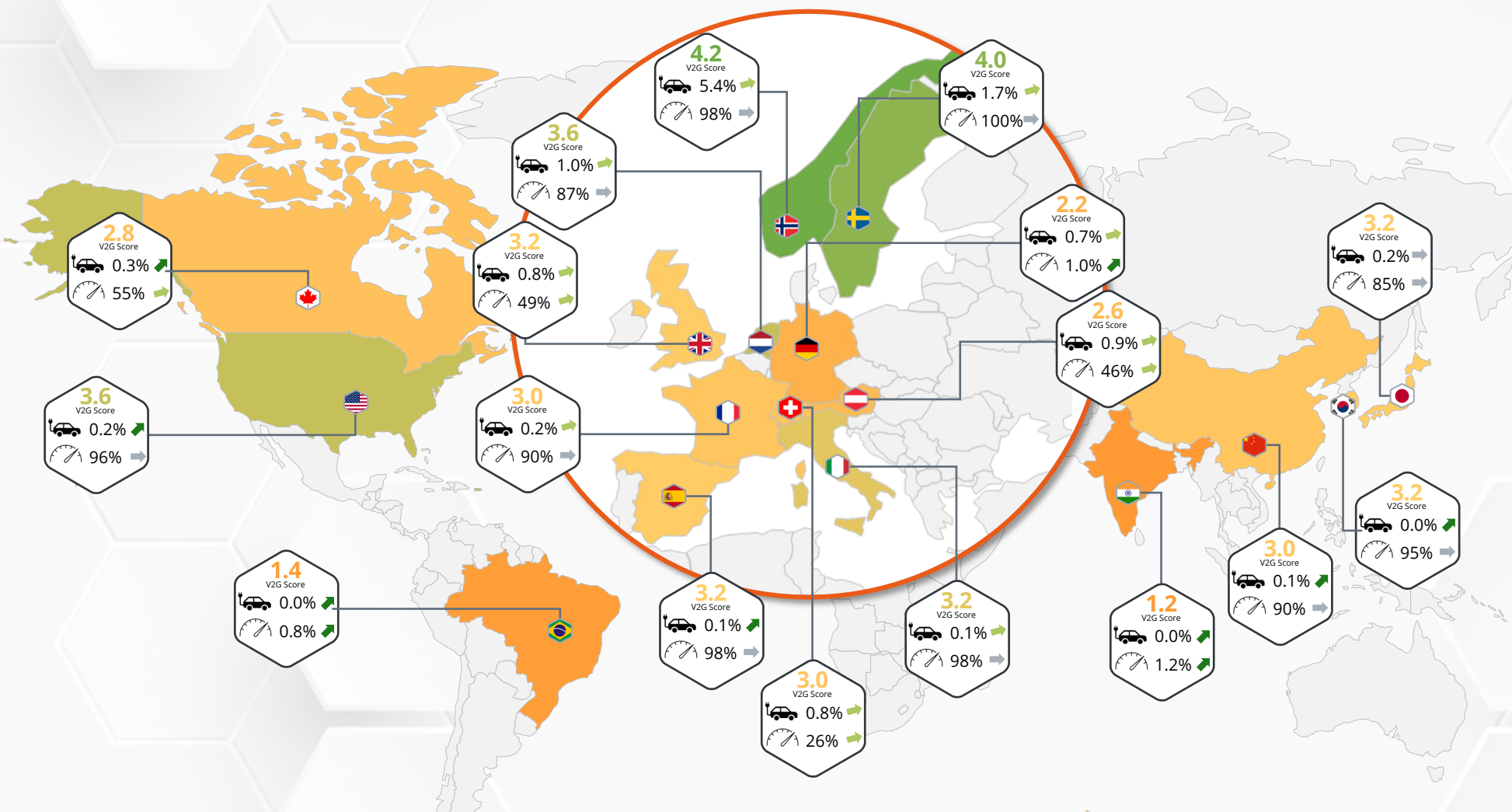berylls

February 2024

VEHICLE TO GRID
READINESS WORLDWIDE

V2G READINESS WORLDWIDE

The Nordics, the Netherlands and the United States are currently leading the V2G Readiness

Rank	Country	V2G Score
1.	Norway	4.2
2.	Sweden	4.0
3.	Netherlands	3.6
4.	USA	3.6
5.	Italy	3.4
6.	Japan	3.2
7.	South Korea	3.2
8.	Spain	3.2
9.	UK	3.2
10.	China	3.0
11.	France	3.0
12.	Switzerland	3.0
13.	Canada	2.8
14.	Austria	2.6
15.	Germany	2.2
16.	Brazil	1.4
17.	India	1.2

V2G Score Parameters
- Households with V2G capable vehicles
- Smartmeter Penetration Rate
- V2G Projects

Source: Berylls Strategy Advisors, IHS Production and Sales Data

5.0 V2G-Score (1 lowest, 5 highest)   Smart meter penetration rate (in %)   Households with V2G Capable Vehicles (in % of total households)
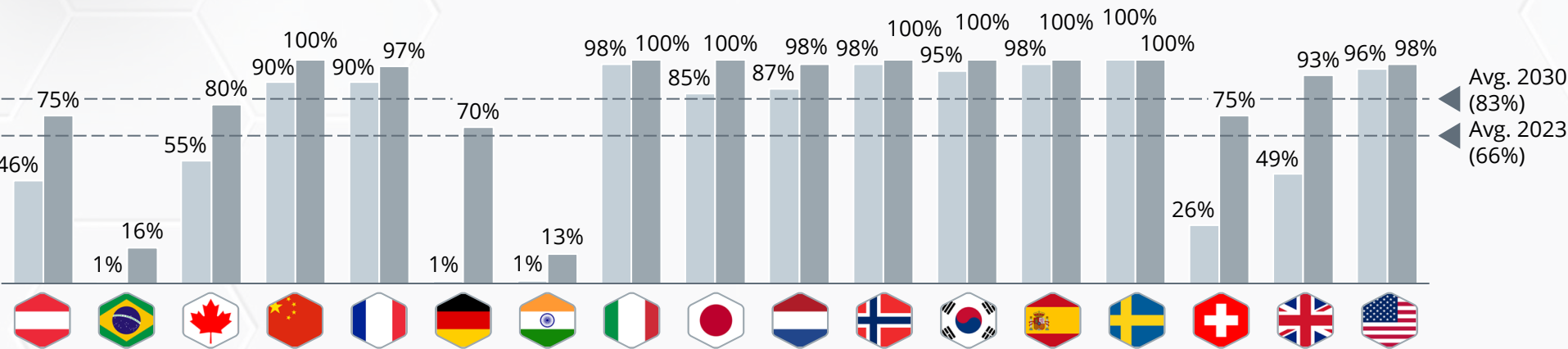
V2G GROWTH IN KEY MARKETS

A strong growth is expected in the V2G capable vehicles, which combined with the increasing smart meter penetration rate presents significant monetization opportunities.
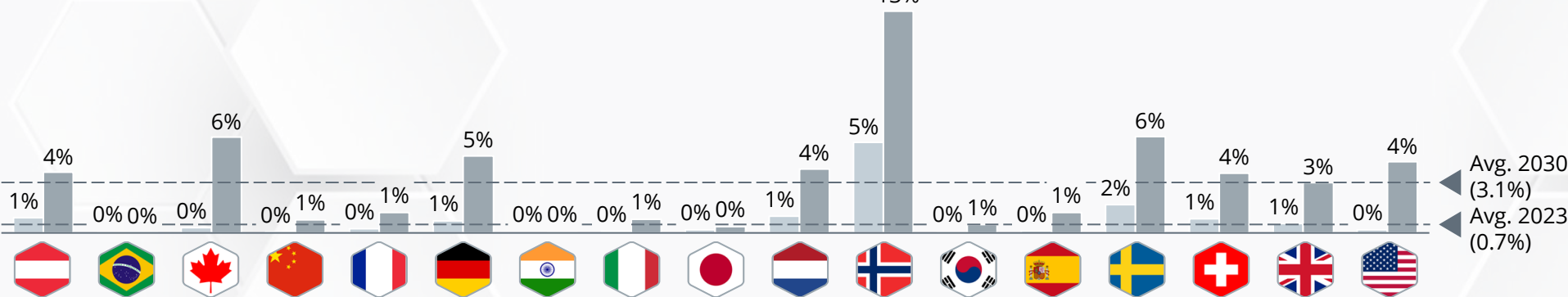
SHARE OF HOUSEHOLDS EQUIPPED WITH SMART METERS
In % of total households

Legend: 2023 | 2030

Austria: 46% / 75%
Brazil: 1% / 16%
Canada: 55% / 80%
China: 90% / 100%
France: 90% / 97%
Germany: 1% / 70%
India: 1% / 13%
Italy: 98% / 100%
Japan: 85% / 100%
Netherlands: 87% / 98%
Norway: 98% / 100%
South Korea: 95% / 100%
Spain: 98% / 100%
Sweden: 100% / 100%
Switzerland: 26% / 75%
UK: 49% / 93%
USA: 96% / 98%

Avg. 2030 (83%)
Avg. 2023 (66%)

FLEET SHARE OF V2G-CAPABLE BEV'S IN KEY MARKETS
In % of total vehicle sales

Legend: 2023 | 2030

Austria: 1% / 4%
Brazil: 0% / 0%
Canada: 0% / 6%
China: 0% / 1%
France: 0% / 1%
Germany: 1% / 5%
India: 0% / 0%
Italy: 0% / 1%
Japan: 0% / 0%
Netherlands: 1% / 4%
Norway: 5% / 13%
South Korea: 0% / 1%
Spain: 0% / 1%
Sweden: 2% / 6%
Switzerland: 1% / 4%
UK: 1% / 3%
USA: 0% / 4%

Avg. 2030 (3.1%)
Avg. 2023 (0.7%)

Source: Berylls Strategy Advisors, IHS Production and Sales Data

KEY INSIGHTS

» For most European countries, the bottleneck for V2G is compatible vehicles not homes

» V2G capable vehicle penetration correlates closely to the strength of EV-markets.

» Current smart meter roll-out mainly driven by legislation – drastic differences between European countries

DETAILED RANKING

Rank	Country	V2G Score	V2G Capable BEVs 2023	V2G Capable BEVs 2030	Smart Meter Penetration 2023	Smart Meter Penetration 2030
1.	Norway	4.2	5.4%	13.20%	98.0%	100.0%
2.	Sweden	4.0	1.68%	5.74%	100.0%	100.0%
3.	Netherlands	3.6	0.98%	3.80%	87.0%	98.0%
4.	USA	3.6	0.20%	4.23%	96.0%	98.0%
5.	Italy	3.4	0.11%	0.82%	98.0%	100.0%
6.	Japan	3.2	0.20%	0.38%	85.0%	100.0%
7.	South Korea	3.2	0.02%	0.50%	95.0%	100.0%
8.	Spain	3.2	0.12%	1.22%	98.0%	100.0%
9.	UK	3.2	0.55%	3.00%	49.0%	93.0%
10.	China	3.0	0.07%	0.78%	90.0%	100.0%
11.	France	3.0	0.24%	1.20%	90.0%	97.0%
12.	Switzerland	3.0	0.84%	3.56%	26.0%	75.0%
13.	Canada	2.8	0.30%	5.70%	55.0%	80.0%
14.	Austria	2.6	0.90%	3.60%	46.0%	75.0%
15.	Germany	2.2	0.72%	4.59%	1.0%	70.0%
16.	Brazil	1.4	0.00%	0.04%	0.8%	16.0%
17.	India	1.2	0.00%	0.01%	1.2%	13.3%