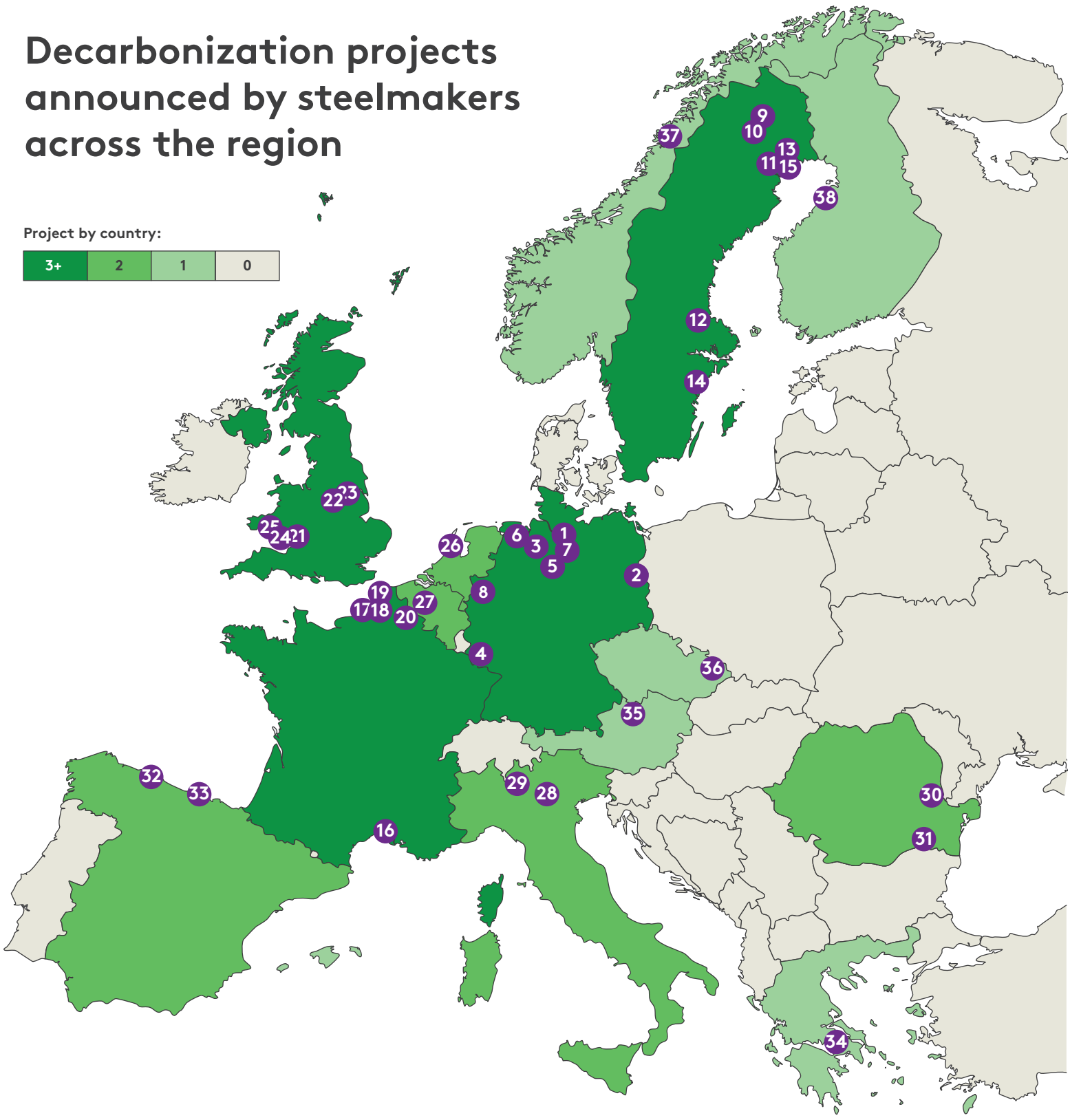
Decarbonization projects announced by steelmakers across the region



Germany		
1	ArcelorMittal, Hamburg	DRI-EAF, H2Hamburg will use hydrogen as the reductant in DRI production initially with 'grey' hydrogen (non-renewable hydrogen sourced from natural gas)
2	ArcelorMittal, Eisenhüttenstadt	Pilot DRI plant and EAF
3	ArcelorMittal, Bremen	• Electrolyzer for hydrogen production use • Industrial DRI plant and EAF
4	Rogesa, joint subsidiary of Dillinger & Saarstahl, Dillingen	• To use hydrogen-rich coke gas in BFs as a reducing agent and process gases in BF • New circular cooler dedusting system at sinter plant
5	Salzgitter (Salcos) WindH2, Salzgitter	Wind Hydrogen Salzgitter - construction of seven wind turbines to power electrolyzer for hydrogen production
6	Salzgitter (Salcos), Wilhelmshaven	DRI plant with upstream electrolysis plant for hydrogen
7	Salzgitter (Salcos), Peine	To produce green strip steel via scrap in EAF
8	Thyssenkrupp, Duisburg	• To use hydrogen as a reducing agent for iron ore in BF 9 • 1.2 million tpy DRI plant in Duisburg with integrated melting unit (BF 2.0) • Feasibility study for water electrolysis plant as part of green hydrogen goals • Thyssenkrupp and TSR recycling to explore use of scrap in BF • Will replace four BFs with DR plants and green hydrogen
Sweden		
9	Hybrit (SSAB, LKAB and Vattenfall), LKAB Malmberget	Plant to manufacture fossil-free iron-ore pellets
10	Hybrit (SSAB, LKAB and Vattenfall), Gällivare	Production plant to produce fossil-free DRI
11	Hybrit, (SSAB, LKAB and Vattenfall) Luleå	• Will build 100 cubic metre underground hydrogen facility • DRI-pilot plant to replace coking coal with hydrogen and fossil-fuel free electricity
12	Ovako, Hofors	• To use hydrogen to heat steel before rolling • Will build hydrogen plant
13	H2GreenSteel, Boden-Luleå	Hydrogen steel plant
14	SSAB, Oxelösund	Convert BFs to EAFs
15	SSAB, Luleå	Convert BFs to EAFs
France		
16	ArcelorMittal, Fos-sur-Mer	Study to build second Carbalyst plant for BF waste gas
17	Dillinger, Dunkirk	To modernize pusher furnace No2 to achieve a 2.7% reduction in CO_2 emissions
18	ArcelorMittal, Dunkirk	• Carbon capture pilot project and IGAR, Hybrid BF using DRI gas injection • DRI plant and arc furnace. Working with Air Liquide for hydrogen
19	Liberty Steel, SHS & Paul Wurth, Dunkirk	MOU to explore 1 GW hydrogen electrolysis plant and 2 million tpy DRI plant
20	Stahl-Holding-Saar (SHS)/Saarstahl, Ascoval (previously Liberty France)	Green rail produced via EAF
UK		
21	Liberty Steel, Newport	Plans for new EAF and sustainable power
22	Liberty Steel, Rotherham	To produce rebar from domestic scrap in EAF via green steel strategy
23	British Steel, Scunthorpe	To increase the use of scrap in its steelmaking process to reduce its carbon emissions
24	Celsa UK, Cardiff	56% of electricity is from renewable sources
25	Tata Steel, Neath Port Talbot	Exploring carbon capture as part of South Wales Industrial Cluster (SWIC)
Netherlands		
26	Tata Steel, IJmuiden	• Seeking permits for carbon capture and storage under the North Sea; water electrolysis facility to produce hydrogen and oxygen • HIsarna technology
Belgium		
27	ArcelorMittal, Ghent	• Carbalyst/Steelanol - to capture waste gases from BF and biologically convert these into bio-ethanol • Torero to convert waste wood into bio-coal to displace fossil fuel coal currently injected into the BF
Italy		
28	Duferco, Brescia	Beam furnace using hydrogen fuel-injected burners. Power via green PPA
29	Tenaris, Edison and Snam	Hydrogen-based steelmaking via electrolyzer
Romania		
30	Liberty Steel, Galati	To build DRI plant & 2 EAFs as part of green steel strategy, to use domestic scrap
31	Beltrame	600,000 tpy green rebar and wire rod mill
Spain		
32	ArcelorMittal, Asturias, Gijón	• Coke oven gas project using grey hydrogen • 2.3 million tpy green hydrogen DRI and 1.1 million tpy hybrid EAF
33	ArcelorMittal, Sestao	Full-scale zero carbon-emissions steel plant, via green hydrogen and renewable electricity. DRI via Gijón
Greece		
34	Corinth Pipeworks, Thisvi	To be carbon-neutral via renewable electricity and other carbon-offsetting measures
Austria		
35	voestalpine, Primetals Technologies, Linz	• Pilot plant to process iron ore concentrate from ore beneciation using hydrogen gas as reduction agent • Convert three BFs to EAFs
Czech Republic		
36	Liberty, Ostrava	Replace four tandem furnaces with two hybrid furnaces
Norway		
37	Celsa, Statkraft & Mo industripark AS, Mo i Rana	Hydrogen Hub Mo, a plant for electrolysis-based hydrogen production for use in the manufacture of reinforcing steel
Finland		
38	SSAB, Raahe	Convert BFs to EAFs