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Environmental sustainability of NdFeB magnet recycling: foresight study on recycling systems and technologies

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**Environmental sustainability of NdFeB
magnet recycling**

Foresight study on recycling systems and
technologies

Colophon



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“When we try to pick out anything by itself,
we find it hitched to everything else
in the Universe.”

– John Muir (1911)

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Abbreviations

BEV	Battery electric vehicle
CRM	Critical raw material
DfR	Design for recyclability
DPP	Digital product passport
EV	Electric vehicle
EoL	End-of-life
EF	Environmental footprint impact assessment method
EU	European Union
EPR	Extended producer responsibility
FCC	Fluid catalytic cracking
GHG	Greenhouse gas
HDD	Hard-disk drive
HEV	Hybrid electric vehicle
HPMS	Hydrogen processing of magnetic scrap
HDDR	Hydrogenation–disproportionation–desorption–recombination
ICP-OES	Inductively coupled plasma optical emission spectrometry
KPI	Key performance indicator
LCA	Life cycle assessment
MRI	Magnetic resonance imaging machine
MFA	Material flow analysis
MIM	Metal injection molding
NdH ₂	Neodymium hydride
NdFeB	Neodymium–iron–boron alloy
NiMH	Nickel-metalhydride
PV	Photovoltaic
PHEV	Plug-in hybrid electric vehicle
REE	Rare earth element
R&D	Research and development
RQ	Research question
§	Section
SSD	Solid-state drive
TRL	Technology readiness level
WEEE	Waste electric and electronic equipment

