

Critical Raw Materials Act

How to secure *resilient & responsible* supply of critical metals

Summary

- Critical metals such as copper, nickel and lithium are **essential** to scale up climate saving technologies.
- **Europe can refine over half of lithium it needs by 2030.** Beyond boosting domestic **resilience**, the Critical Raw Materials Act should ensure **responsible** sourcing and scale up European **recycling** capacity.
- EU Strategic Projects are needed, but must meet high **social & environmental standards**; EU mining waste legislation should be updated & EU potential to recover metals from mining waste analysed.
- Global imports should measure CO₂. Global cooperation should be centred on open markets, targeted investments & **IRMA** certification.
- A new EU **critical metals agency** should monitor compliance.

Context

The fight against climate change is a race against the clock. Transitioning to renewable energy, efficient buildings and electric vehicles *rapidly* and at unprecedented *scale* is essential if we are to limit warming to 1.5°C. Beyond climate, our reliance on fossil fuels also undermines our energy security as the Russian invasion of Ukraine has highlighted.

The European Green Deal, notably the target to reduce new car and van CO₂ emissions by 100% by 2035, as well as higher renewables and infrastructure

ambitions, will require a lot more copper, lithium, nickel and other critical metals.

Europe is neither first nor alone in its efforts to secure those. China began as far back as the 1980s and today [refines 85% of rare earths](#) found in electric cars and wind turbines, and [65% of all lithium](#) found in batteries. Chinese companies control much of [cobalt in the DRC](#), [lithium in Chile](#) and [nickel in Indonesia](#).

Meanwhile, the US Inflation Reduction Act is a game changer in industrial policy. Only electric cars with batteries and raw materials procured in North America or friendly countries will get tax credits. This

has unleashed a wave of domestic [investment announcements](#) in just a few months. The risk for Europe is that companies will now prioritise the US market over Europe's: e.g. Tesla is [rumoured](#) to be delaying its German battery gigafactory.

The EU Critical Raw Materials (CRM) act is part of the answer to the metals supply challenge. Europe should look at "supply" in broader terms that include mining, recycling, as well as refining & processing of metals. Both new mining capacity and a rapid scale up of secondary supply will be needed given the challenge.

But for it to work, the new legal framework must tackle the problems in line with European values. This means resilience, as well as consistent compliance with high social & environmental standards. This short paper outlines T&E views.

Potential in Europe

To be effective, the CRM act should send a strong signal to the metals industry to invest in Europe. This will create future jobs and social value, replacing the old fossil fuel industries. Setting high-level targets will help create that certainty, coupled with funding.

Refining critical metals – once they've been extracted and before they can be turned into batteries or wind turbines – is where Europe in particular lags behind. This processing industry is essential for mining as well as recycling, and is where most value-add sits upstream.

Unlike mining, refining plants can be scaled up quickly and do not depend on geology.

Europe can supply around 50% of its refined lithium needs in 2030

T&E looked into refining lithium – into Li hydroxide or Li carbonate – as it's key to the EV battery value chain. We have analysed the announcements for refineries in Europe, including independent projects and those integrated with mining. If the projects come online on schedule, the **total production of refined lithium can reach around 72 ktonnes of pure Li by 2030¹**. Compared with the 2030 demand² from electric light and heavy duty vehicles as well as energy storage (around 147 ktonnes in the high case scenario³), these can meet almost **50% of the processed lithium needs in Europe**.

¹ Based on the publicly available capacity of the projects so far; adjusted for 80% operating capacity.

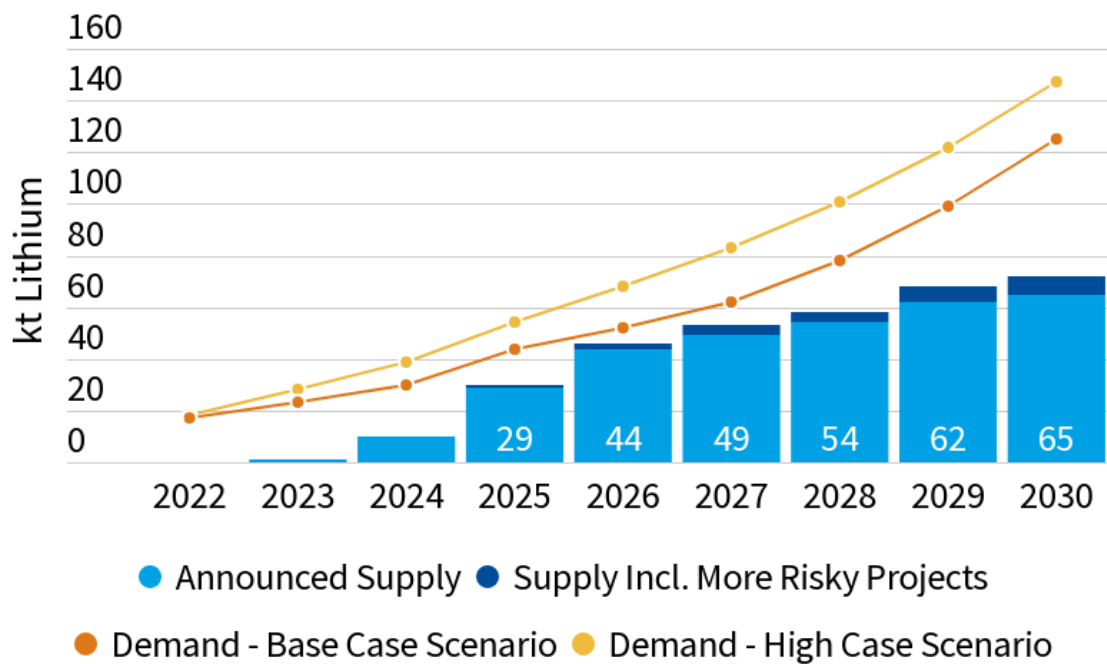
² High-case scenario includes e-car, e-van and e-truck supply close to automakers' commitments, base-case scenario is based on latest EU regulatory requirements. A report is to follow in December with detailed methodology.

³ Lithium demand on a gross basis, i.e. taking into account losses of 20% in battery manufacturing.





Europe can produce around half of refined Li demand by 2030 Production of all announced projects would amount to 70+ kt of pure Li



Source: T&E analysis, company reports



T&E recommendations

1. EU Strategic projects

The CRM act plans to introduce a list of strategic metals to focus on, as well as a list of European strategic projects in mining, recycling and refining. Similar to IPCEI for batteries, this is an industrial policy that has shown to work.

But to benefit from faster permitting or finance, such projects should demonstrate that they meet high environmental and social standards. This should include *water*

management (in line with the EU's Water Framework Directive), *tailings* management (in line with best practice such as [IRMA](#) or [Safety First](#)), *biodiversity* (such as the EU Habitats Directive), as well as *emissions* control.

With extractive industries in decline for decades, some of Europe's standards are outdated. Waste, for example, is one of the core challenges associated with mining, but Europe's requirements on this are [behind those in Brazil, Ecuador and China](#). Alongside CRM, Europe should review its



mining waste legislation and align it with global best practice, e.g. require dry tailings.

In short, the “strategic project” label should be conditional upon consistent application of best practice in waste, water and pollution control, underpinned by engagement with and consent from local communities. Doing things right is the fastest way to get project approvals in Europe.

2. Circularity & recycling

With millions of electric cars entering the fleet each year from 2020 (and a lot more spent batteries available from consumers), the potential from end-of-life products will be significant from at least 2030 onwards. Pre-2030, manufacturing scrap from the many battery factories setting up shop in Europe will also [be available for recycling](#). Scaling recycling expertise, capacity and skills in Europe today is no regrets and is core to the bloc’s supply resilience.

The CRM act should facilitate this, dismantling the barriers and harmonising standards across Europe. In particular, safety or quality standards could be considered for recycling manufacturing scrap and EoL materials (e.g. “black mass” from batteries) to aid the recyclers in Europe.

Another potential comes from extracting metals from the existing mining waste, or “**re-mining**”. As a first step, potential from existing mine sites in Europe should be mapped (as the US has already done), and then the recovery supported and prioritised as the next step. E.g. the [LKAB](#)

[project](#) in Sweden has the potential to recover rare earths from mining waste equivalent to 30% of the EU’s current demand.

3. Global imports

Even if the end game is circularity, Europe will rely on global imports for a long time. The CRM act should promote transparent and diverse markets, as well as create a framework for the public and private investment into projects outside of Europe provided high environmental and social criteria are guaranteed (regardless of the strictness of the rules in the foreign country in question). The Commission should also consider requiring the **IRMA certification** from future mining and refining projects that benefit from EU funding. This can help the Global South develop expertise and extract better social and economic value from their resources.

While most global environmental due diligence is covered under the Corporate Social Due Diligence Directive (CSDDD), the CRM Act should in addition require all metal suppliers to measure and report their **carbon emissions per tonne of material**. This will reward those investing in better technology, as well as recyclers.

Cooperation

The EU will soon require a “battery passport” that traces where and under what conditions battery minerals were produced. Separately from the CRM law, the EU can work with countries like the US, Japan and South Korea to extend this across some of the largest electric vehicle

markets. This will bring scale to better sourcing practices globally.

4. Governance

Finally, someone needs to be responsible for making all this happen. Recognising the importance of nuclear fuel, Europe created the EURATOM agency in 1957. We need a **European Critical Metals authority** in 2022.

This should:

- coordinate the efforts of 27 EU governments & map resource gaps;
- ensure high standards are met consistently;
- have powers to invest in projects globally; and
- oversee joint purchasing or stockpiling across the bloc.

Last thought

Europe can't do it alone. Global markets, including China, will be needed for scale, innovation and competition. But we should not be naive. The Critical Raw Materials Act should support *resilient* and *sustainable* metals supply for the European Green Deal. Europe should also consider its own version of the "US IRA", i.e. add *local content requirements* to the millions of euros of electric vehicle subsidies that EU governments provide each year.

Further information

Julia Poliscanova
Senior Director, Vehicles & Emobility
Transport & Environment
julia.poliscanova@transportenvironment.org
Mobile: +32(O)471 44 96 43

