

Eress

MAGAZINE

2024



ERESS

Transparent Energy Solutions for EU Railways

The EU is about free trade and the transport of goods and people through a liberated common economy. Eress understands how trains and transportation are key for a robust economy, requiring compatible communication among IT systems in Europe. With Portugal as its tenth partner, the Eress mission continues to facilitate standardising railway energy and its processes for member countries.

Several countries are behind the EU deadlines, so train companies approach Eress looking for solutions for fairer systems and the ability to follow regulations.

“The market failure of several countries is increasing the pressure on Infrastructure Managers without compliant systems. Several countries in Europe have not met the EU Commissions deadlines. This presents an opportunity for Eress to onboard more members, leading to greater energy savings across Europe,” explains Eress Director Dyre Martin Gulbrandsen.

As the EU begins planning a consulting process to assess member states to consider their compliance situations, Eress’ cooperative model with its current partners has become even more efficient, reducing energy

use and costs. Although energy prices have fallen some over the last 2 years, prices are still high all over Europe. These high energy prices are acting as an incentive for new member countries, giving their railway industries a short payback for initial investments.

Many European countries have a way to go before they fully comply with the current laws. On the other hand, Eress offers a low initial investment, training and an up-to-date technical solution, which shows why Eress partners see in it a win-win case, both individually and collectively. Reduction of costs and energy waste are not solely a response to the EU regulations. It also strengthens rail’s competitive position vis-à-vis other modes of transport. In the end it depends of the will of each Infrastructure Manager in Europe to offer the best possible solutions to their customers.



“Networking and teamwork are key to the success of the Eress organisation. The annual Eress Days allows all stakeholders, infrastructure representatives, train operators, government personnel, and the EU commission to meet and develop relationships in this specialised niche industry,” notes Kjetil Mikelborg, Chairman of Eress Steering Group.



Eress Director Dyre Martin Gulbrandsen won the Bane NORs' Sustainability Award for his long-term work within the Eress organisation.

Eress main highlight this year is that from January 1st, 2025, Portugal will become its tenth partner. Thus, train companies running in these 10 countries will be invoiced for energy using fair and transparent methods. This means that train companies will be able to plan ahead their energy costs and consumption. With Portugal, the process of onboarding new partners has been efficiently improved. This will benefit future Eress Partners as well.

At Eress, this year was marked with system stability and performance, focusing on strengthening the team and adding more people to the organisation. Eress has been working specifically for solid and stable performance and streamlining our processes across the partner countries.

“This year, I have been especially impressed with the development of our systems as we shifted from a project focus to a product focus development process. This lean work method standardised our approach for all 10 partners really effectively. All tasks are prioritised as we work closely with our partners in development and operations now that the software is less complex, making it easier to maintain and further develop at a lower cost,” continues Gulbrandsen.

Eress develops systems and routines to deal with multiple partners, systems and regulations in several countries to accommodate each.

Mikelborg continues, “The remarkable competence of the individuals at Eress has impressed me during my first year as Chairman of the Steering Group. As we move into the future, I see a shift to a greater focus on expanding membership and investigating new opportunities. Also, I would like to congratulate Eress Director Dyré Martin Gulbrandsen, who has recently won the Bane NORs Sustainability Award for his long-term work within the Eress organisation”.



PARTNER

Portugal Becomes Tenth Eress Partner

In 2023, Portugal performed close to 550.000 train runs nationwide. Over 90%, 510.000, were passenger trains. With four railway companies operating in Portugal, the largest company remains the state-owned passenger railway operator, CP - Comboios de Portugal.

The current settlement system in Portugal is relatively simple and easy to maintain with low costs. Still, the downside is that it is not very accurate. The infrastructure manager, Infraestruturas de Portugal (IP), identified the need to implement improvements in traction energy settlement with more fairness, accuracy, and efficiency. IP, alongside the railway companies operating in Portugal, initially approached Eress almost 10 years ago. The decision was made to continue with the current system due to the absence of adequate metering systems and required upfront costs considered prohibitive at the time.

2021-2022 was the perfect timing to move forward and implement the EU regulations for train metering and settlement after IP reassessed the need for a more accurate and fair way to split energy charges.

“Some countries have their own systems, so we studied alternatives and the possibility to develop our own system. For us, Eress was the answer. With its 20 years of experience, joining Eress meant we were not starting from scratch.” Marco

Santos, Head of Unit, Infraestruturas de Portugal (IP)

After more than two years as a test partner, IP is scheduled to join Eress as a full partner on January 1st, 2025. Work continues during 2024 to adjust some internal procedures and prepare market interfaces with the railway companies. The “soft start” as a test partner, which started in March 2022, provided IP time to prepare and set up the backbone to interface with the Eress platform, Erex. IP also supported the railway companies, so they could start planning and executing the implementation of the new energy metering systems.

Starting January 2025, as a full partner with Eress, IP will transition the entire settlement to Eress settlement system.



“We acquired a lot of know-how through the relationship with Eress these past two years, not only about energy settlement systems. We have been working on Third Party Access, which I believe will be a major issue at Eress in the near future. We have also been working on changing energy purchasing strategies and our own energy production to reduce traction energy costs. We still have a long way to go, but I believe IP is on the right track as Portugal becomes a full partner with Eress”, continues Marco Santos.

Portugal has been planning the next cycle of strategic and structuring investments in the National Railway Network to

meet the needs and challenges of the next decade and decades to come. This includes international commitments, including bilateral commitments with Spain and those resulting from the Atlantic Corridor, promotion of the transport of goods, and in particular exports, and articulation between the national ports and the mainland borders with Spain.

With an extensive highway and train network, tourists and residents can enjoy the sunny, warm weather and extensive beaches on over 940 km of coastline on Portugal’s mainland.



“Portugal is a popular tourist destination. I wouldn’t recommend Portugal for snow and skiing. If you’re looking for that, stay away from Portugal (laughs). For food enthusiasts, Portugal offers a very diverse gastronomy, ranging from traditional to modern cuisine. I recommend the traditional, both savoury and sweet. This “wallet-friendly” destination has affordable accommodation and restaurants”, concludes Marco Santos.



STATISTICS

Railway Energy in Europe 2024

For eight years now, the Sustainable Development Foundation has been collaborating with Eress by conducting the survey on railway energy in Europe. The survey is addressed to European Train Operators (TOs) of the rail sector and Infrastructure Managers (IMs).

The aim is to take a snapshot of the state of the art of the sector in Europe and to provide stakeholders' views on various topics, from the update in terms of legislation to the

technological development. It is also important to detect their perception of key issues such as interoperability and political commitment.

In the 2024 edition in particular, the key was the cooperation between Train Operators and Infrastructure Managers. This is crucial to ensure that data can be exchanged quickly and easily. Therefore, participants were asked if they were satisfied with the level of cooperation between the parties and what are the main

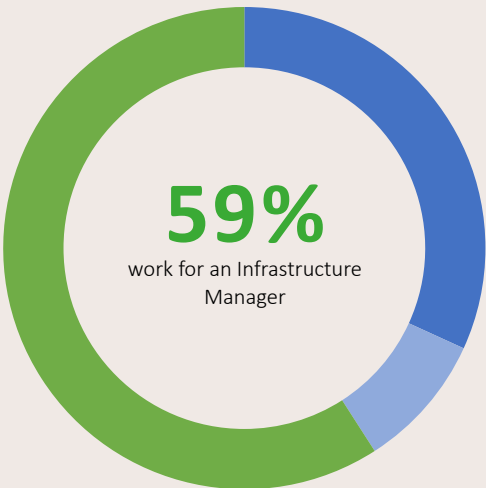
challenges they see in front of them.

It turned out that only half of the experts who responded believe that cooperation is strong enough. Clearly, there is still work to be done on this but, on the other hand, many - both TOs and IMs - provided points for reflection and suggestions for improvement, confirming that there is a lot of interest on both sides in a more productive cooperation.

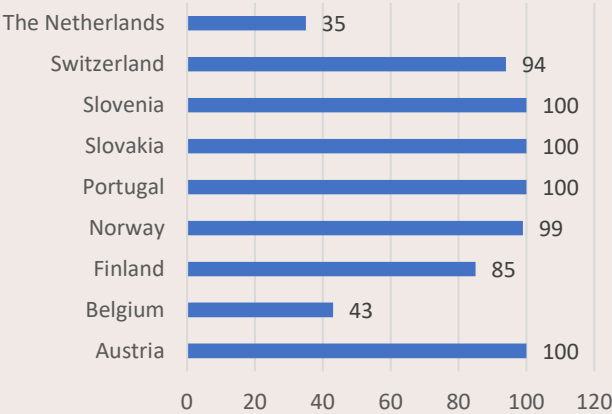


Where do you work? I work for

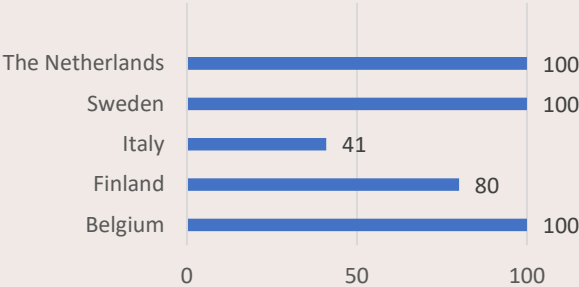
■ Train Operator 32 % ■ Vehicle Keeper 9 %
■ Infrastructure Manager 59 %



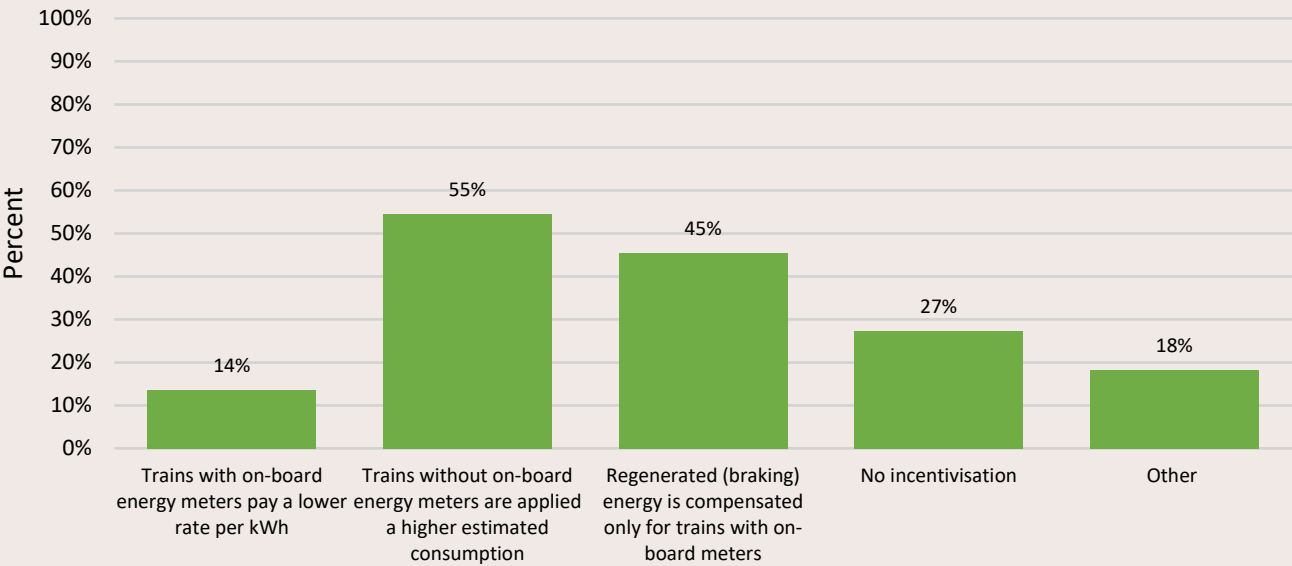
Percentage (%) of traction units with installed meters
Infrastructure Manager



Train Operator

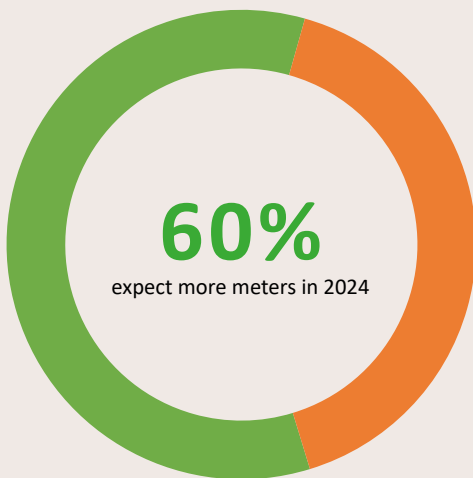


How is the installation of on-board energy meters incentivised in your country?
(multiple choices allowed)



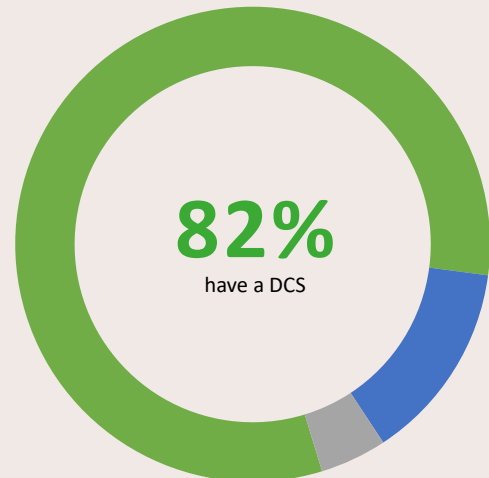
Do you expect to have more meters in 2024?

■ Yes 60 % ■ No 40 %



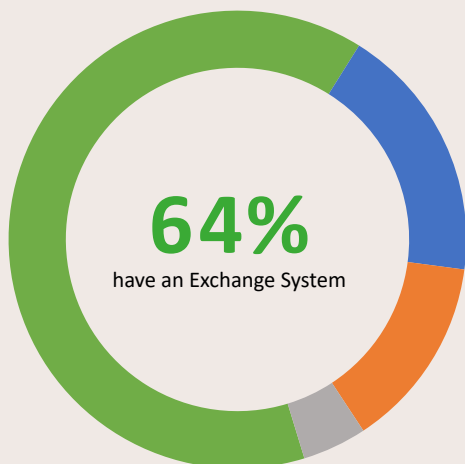
Do you have a Data Collecting System (DCS) in your country to correctly gather energy metering data from trains for billing purposes?

■ Yes 82 % ■ It is in progress 14 %
■ No 0 % ■ I don't know 4 %



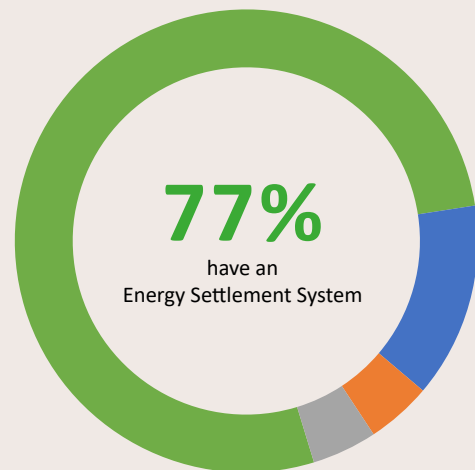
Do you have an Exchange System in your country to correctly distribute energy metering data from trains to other countries for billing purposes?

■ Yes 64 % ■ It is in progress 18 %
■ No 14 % ■ I don't know 4 %



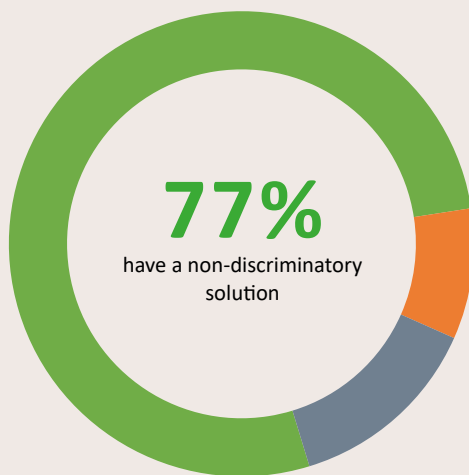
Do you have an Energy Settlement System in your country to correctly handle energy metering data from trains for billing purposes?

■ Yes 77 % ■ It is in progress 14 %
■ No 5 % ■ I don't know 4 %



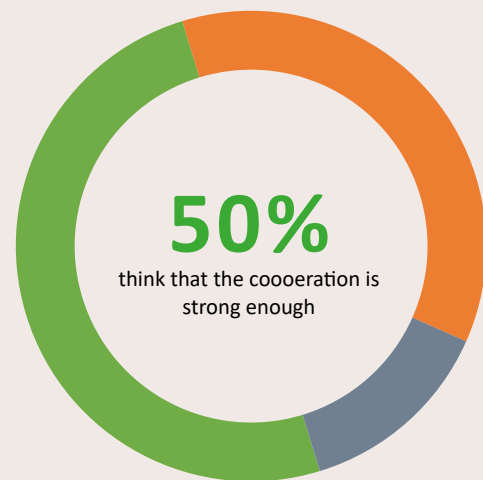
Do you have a non-discriminatory solution in your country to correctly invoice train companies that use meters?

■ Yes 77 % ■ No 9 % ■ I don't know 14 %



Do you think that the cooperation between Infrastructure Managers and Train Operators in EU is strong enough regarding energy use?

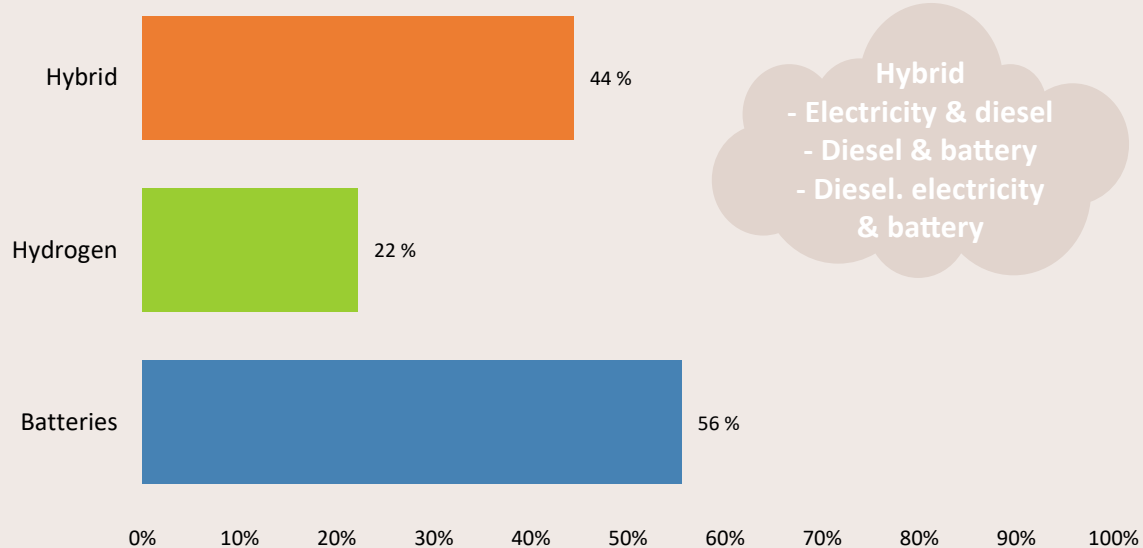
■ Yes 50 % ■ No 36 % ■ I don't know 14 %



Do you have any ideas on how to improve the cooperation between Infrastructure Managers and Train Operators?

- More information between Infrastructure Managers and Train Operators.
- A mandatory office at the Train Operator dedicated to rolling stock energy consumption.
- Infrastructure Managers need to work together and find best solutions across borders for international Train Operators. The sector still have a way to go here.
- More transparency in certain countries.
- Make a manual to explain how everything works and who to contact for the different topics.
- More incentives for rail undertakings. More European governance.
- IM should always offer traction energy as an additional service.
- IM should permit free choice of supplier for TOs having on-board EMS on the complete fleet
- One development issue is to increase understanding of different railway failures, speed limitations etc. to energy efficiency.

Which new technologies for traction energy have been adopted in your organisation?



I work for..	Country	Which CO2 targets has your organisation set and which are the deadlines?
Infrastructure Manager	Norway	<ul style="list-style-type: none"> - Reduce consumption of fossil fuels energy sources with 40% by 2030, compared to 2019. - Minimize pollution of bog, soil, forest.
Infrastructure Manager	Switzerland	<ul style="list-style-type: none"> - Cut by 1/2 the CO2 emissions until 2030 compared to 2018.
Infrastructure Manager	Portugal	<ul style="list-style-type: none"> - By 2025, 75% of all energy purchased for railway must come from renewable sources and 100% by 2030.
Infrastructure Manager	Austria	<ul style="list-style-type: none"> - The level of electrification is to be increased to 85% by 2030 and to 89% by 2035. Currently, it is 74%. - ÖBB's own supply of renewable energy in the traction power sector is to be increased to 80% by 2030 (in-house production and partner power plants). In the three-phase sector there should be an increase from 11% to 67%.
Infrastructure Manager	Slovakia	<ul style="list-style-type: none"> - In 2023 we started with modernization 20 pieces of diesel traction locomotives. The assumption end of modernization is in 2025.
Infrastructure Manager	Luxembourg	<ul style="list-style-type: none"> - The energy we buy at CFL Infra in Luxembourg and which we pass on to the RUs is 100% green energy imported from Germany.
Infrastructure Manager	Belgium	<ul style="list-style-type: none"> - 10% in 2027 compared with 2019 and -15% in 2032 compared with 2019 (absolute values. At the same time we want to increase train traffic)
Train Operator	Belgium	<ul style="list-style-type: none"> - 2032: - 14%
Train Operator	Finland	<ul style="list-style-type: none"> - CO2-neutral operation in 2035



Partners
Switzerland
Finland
Belgium
Denmark
Sweden
Norway
The Netherlands
Spain
Luxembourg

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