



 **Green** Inland Ports

Good Practices

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Full-electronic invoicing

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1.1 Description

An electronic invoice, also known as an e-invoice, is an invoice that is prepared, sent and received in a structured data format that enables automatic and electronic processing (Medius, n.d.). With fully electronic invoices, less paper is used and wasted. Moreover, unlike traditional invoices, e-invoices are not supposed to be physically processed. Traditional invoices must be printed and delivered which requires significant amounts of energy (Medius, n.d.). Due to the efficient handling and archiving methods when using e-invoices and the removal of manual work of printing, postage, intra-office routing and archiving, significant costs and human resources are being saved (European Commission, n.d.). The chances of human errors are also minimised and the automatism of the process leads to easier legal compliance (DDD Invoices, 2023). Table 1 gives an overview of the key cost savings that make this an interesting good practice for port authorities.

Table 1 - Key e-invoicing cost savings (DDD Invoices, 2023; European Commission, n.d.)

Costs of paper
Printing costs
Mailing costs
Manual handling when sending or receiving the invoice
Review and approval of invoices
Entry of data into Enterprise Resource Planning (ERP) systems
Balancing (reduced error in data entry)
Archiving, handling and storage of invoices
Accounting and compliance reporting

1.2 Aim

The goal for port authorities should be to completely avoid the use physical invoices in the future and switch to e-invoices. This has many benefits for the port authority. In addition to reducing paper and thus the emissions that come with the production of paper, the e-invoicing process is more cost-efficient and labour efficient. It can be time and cost intensive set up the initial system and to make sure that it is compliant with the legal requirements around e-invoicing, as done in [the Netherlands](#), but in the long run it will save financial resources.

1.3 Ports that use full-electric invoicing

- Gyor-Gonyu
- Port of Antwerp-Bruges
- Bolloré (owner of ports).

1.4 Stakeholders

- Port authority or company operating in the port: When an organisation switches from paper and manual invoicing to full-electronic and automated invoicing, this causes a significant change in the invoicing process and could take some for employees to get used to.
- Client: The client is the receiving party of the e-invoices, and it requires a switch from the client side as well, as the invoices are not sent on paper anymore and the payment method will also only be digital.
- E-invoicing company: a company with an e-invoicing platform can be used to make the process of switching to e-invoicing easier.

1.5 Voluntary or mandatory

Whether e-invoicing is voluntary or mandatory depends on the country, and in some cases, it will become mandatory in the future. For example, in the Netherlands, it is currently mandatory to send e-invoices to governmental parties. From 1st January 2026, it will also become mandatory to send e-invoices on the company level (Deloitte, 2023). In Germany e-invoicing is mandatory for public procurement by state authorities. The requirement for companies will be phased in between 2027 and 2028, depending on their annual turnover. (European Commission, 2024b).

In France all companies are required to send e-invoices to public contracting entities via Chorus Pro portal. From September 2026, all businesses must be able to accept e-invoices, and B2B e-invoicing and e-reporting is mandatory for large and medium sized companies. From September 2027, e-invoicing and e-reporting is also mandatory for small businesses. For both deadlines, there is an option to extend it by three months (European Commission, 2024a).

In Greece, Economic Operators are currently obliged to send e-invoices to all contracting authorities and entities for public procurement. From 1st January 2025, e-invoicing will be mandatory for all expenditure over €2,500 in General Government (European Commission, 2024c). In Hungary, there are currently no obligations for companies to use e-invoicing (European Commission, 2024d). In Slovakia, an act specifies the requirements of e-invoicing for public administrations and their suppliers, including that central and sub-central authorities are obliged to accept e-invoices compliant with the European E-invoicing standard. The implementation of e-invoicing will consist of three stages, but none have been rolled out yet, and the start date in 2024 remains uncertain (European Commission, 2024e).

1.6 Realised/potential impact

According to the Federation of Finnish Financial Services (2010), electronic invoices have approximately 67% lower GHG emissions than paper/physical invoices. According to Tungsten Automation (2023), electronic invoices generate 87% fewer greenhouse gases than paper invoices.

Which would lead to a significant absolute number as many organisations process thousands of invoices at a time. Based on research by Sharedserviceslink (n.d.), organisations with a shared services function receive on average 750,000 invoices annually, of which roughly 60% can be received as paper or printable PDFs (this differs a lot per country like mentioned earlier). As each invoice is on average 2 pages long, it counts up to 900,000 sheets of paper.

According to European Commission (n.d.), there are eight steps within the e-invoice process. Each step can have their own source of savings. The process has been pictured in Table 2.

Table 2 – Sources of savings for a company that implements e-invoicing (European Commission, n.d.)

Part of process	Source of savings
The seller prepares the invoice	No savings, unrelated to the form of the invoice
The seller issues the invoice	Paper and printing costs and handling of mail
The seller sends the invoice	In most cases, there are savings in postal costs, as they are replaced by electronic transmission costs (significantly lower costs)
The buyer receives the invoice	Manual handling replaced with semi or fully automated reception system
The buyer approves the invoice	Invoice automated approval frequently provides the buyer with significant benefits by freeing up employees' time, who tend to be on a managerial level
The buyer books the invoice into accounts	Structured e-invoices enable automated information entry and automated assignment of accounting keys through references or rules. Automated entry significantly reduces the risk of entry errors, which can cause significant costs
The buyer schedules the payment	Structured e-invoice allows for automated entry of relevant information, which avoids late payments
The buyer archives the invoice	Reduces archiving costs through reducing handling and storage costs

1.7 Possible obstacles

- One of the main challenges of e-invoicing is the technical complexity and compatibility of different e-invoice systems and formats that can be used within companies. This involves

additional costs, such as investment in new software, hardware, or integration to enable e-invoicing, which can be expensive and time-consuming (LinkedIn, n.d.).

- The legal and regulatory environment can vary widely across different jurisdictions and industries. Companies may have to comply with different rules and requirements for e-invoicing, such as authentication, validation, storage, auditing and reporting. Some countries require e-invoices to have a digital signature or electronic seal, some countries may also require e-invoicing for certain transactions or sectors (LinkedIn, n.d.).
- There may be organisational and cultural resistance, both within the company and with customers/suppliers. This resistance may stem from habits, security concerns, or a lack of awareness, confidence or skills (LinkedIn, n.d.).

1.8 Key learnings

- E-invoicing is a method without many disadvantages which can decrease energy consumption and GHG emissions by a significant amount.
- Setting up an e-invoicing system can be difficult and expensive at first, but in the long run it can save costs and pay for itself.
- The biggest constraints are the high initial costs, legal and regulatory frameworks and the potential organisational/cultural resistance.

1.9 Sources

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