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# SUSTAINABLE ELECTRIFICATION AND DIGITALISATION FOR GREENING SMALL AND MEDIUM-SIZED PORTS ALONG THE TEN-T CORRIDORS

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**Abstract** – Despite the highest competition among the big EU seaports – gateways and hubs, such as Rotterdam, Antwerp, Hamburg or Valencia, etc., which stand for the Core Ports in the European Union (EU) Trans-European Transport Network (TEN-T) Core and Comprehensive Network, the present paper addresses challenges and raises potentials immanent in Small and Medium-Sized Ports (SMSPs) in the EU. Environmental responsibility and digital efficiency – Europe’s twin to a green and digital economy paves the way for SMSPs to improve innovation capacity, upgrade demanded future skills and competencies, accelerate EU policies compliant operational, environmental, digital, social, and market performance. The paper deploys a multi-case study approach. Using an ecosystem approach, the paper reveals potentials and pinpoints to key short- and long-term challenges pursuant to SMSPs in the three different EU macro-regions – Baltic Sea Region, Adriatic/Ionian Sea Region and Mediterranean Sea Region along the four TEN-T Core Network Corridors – Baltic-Adriatic, Orient-East Med, North Sea-Baltic and Scandinavian-Mediterranean. Departing from the role model – Baltic Sea Region – ports of Klaipeda, Wismar, Stralsund and 10 Estonian SPSMs are connected via TEN-T corridors with ports of Bari, la Spezia in Italy and Corfu and Igoumenitsa in Greece. In this vein, knowledge, skills and best practices are transferred from the North Europe to the South and vice versa using the concepts of co-creation and servitisation. Illustrated case studies reveal how all SMSPs are capable to kick-start environmental and digital transition with solutions on Onshore Power Supply (OPS), electrification and digitalisation of port operations through Internet of Things (IoT) and Blockchain solutions used for transport and monitoring operations.

**Keywords** – Blue economy; green transition; maritime transition; port sector