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**PDA in practice:
experience from Gdynia, Gdańsk,
Tczew and Wejherowo (Poland)**

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WiseEuropa

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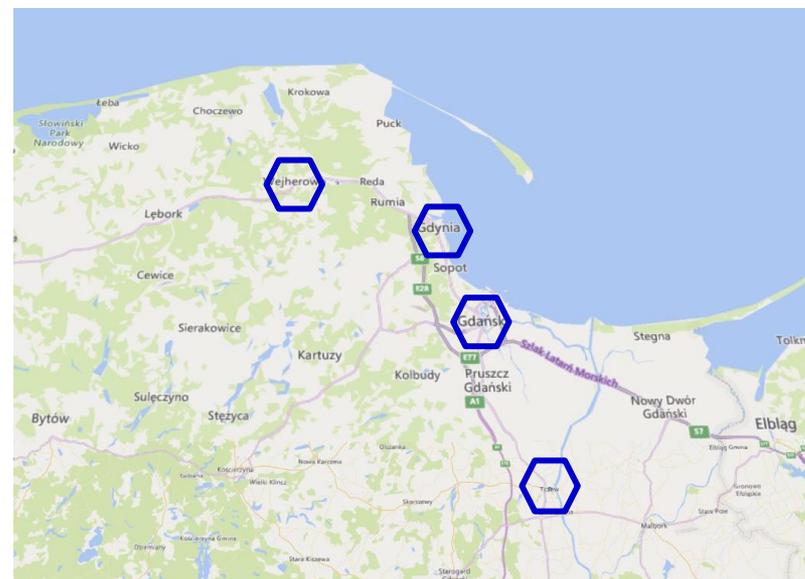


Energy, climate
and environment

Scope of the project

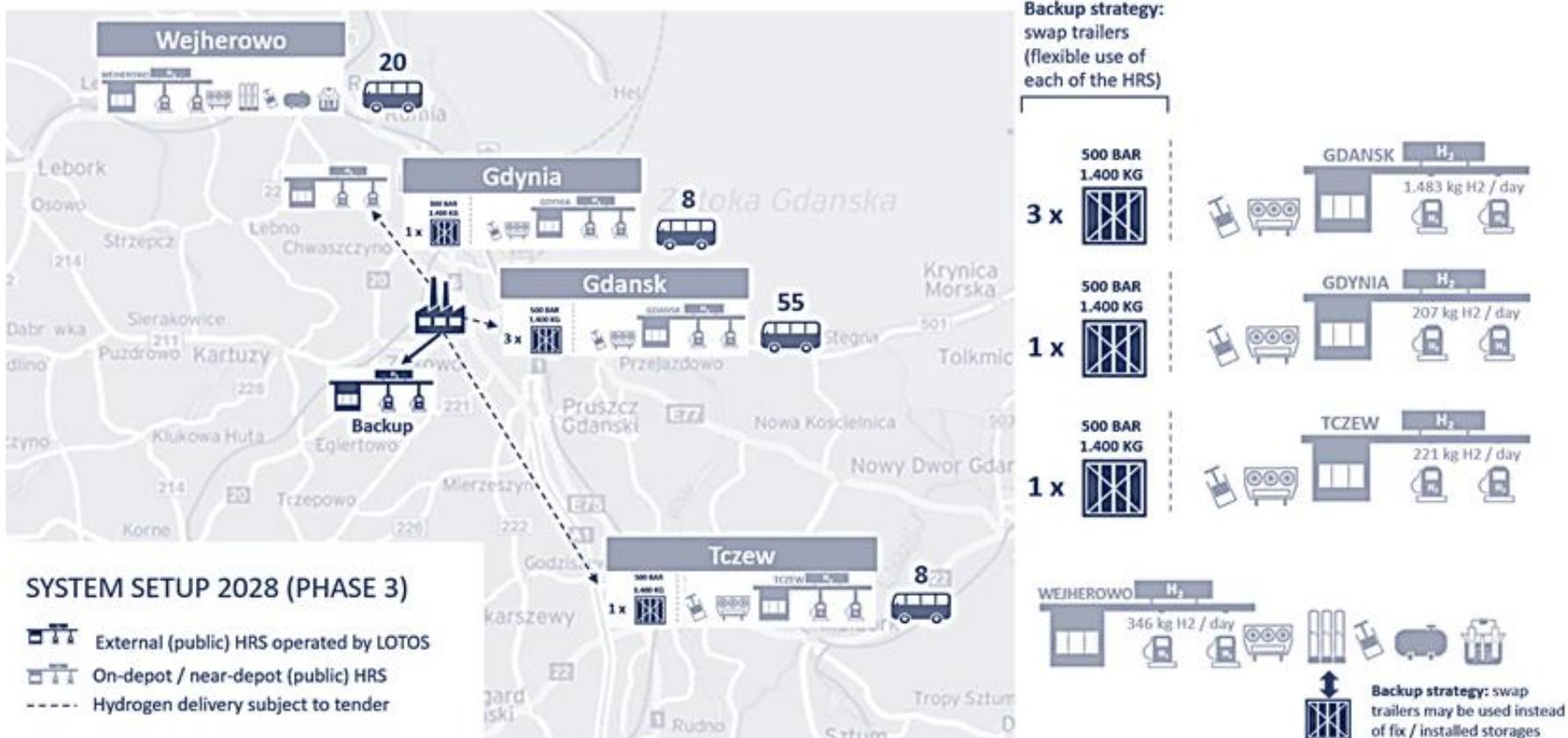
Gdynia, Gdańsk, Wejherowo and Tczew (“4 cities”) in Northern Poland aim to jointly procure and deploy 91 fuel cell buses (51 solo and 40 articulated buses) until 2028.

Bus operator	Number of buses	FC buses by 2028	FC share by 2028
Public Transport Authority in Gdańsk (GAiT)	283	55	19%
Municipal Transport Authority in Gdynia (ZKM)	99	8	8%
Przewozy Autobusowe GRYF Sp. z o.o. in Tczew	25	8	32%
Miejski Zakład Komunikacji Wejherowo Sp. z o.o.	37	20	54%

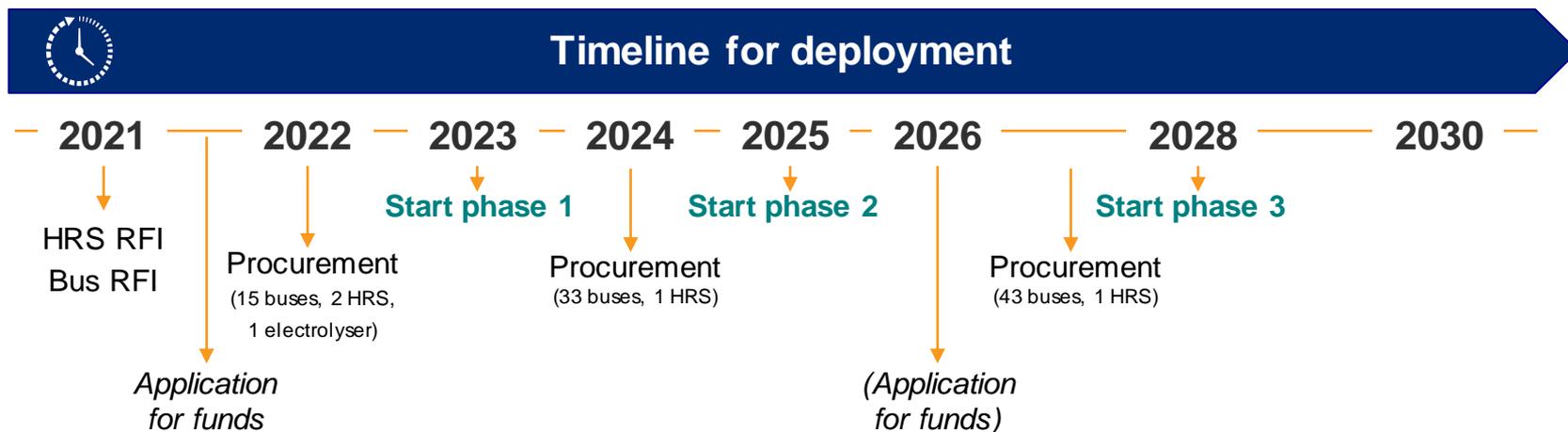


FC bus system setup in 4 cities

Within PDA project, Spilett and WiseEuropa have supported four cities in designing the system setup, taking into account available hydrogen supply options and specific local needs.



Timeline and budget



Gdansk (55 buses, 1 HRS)

38.4 M€

Gdynia (8 buses, 1 HRS)

6.9 M€

Tczew (8 buses, 1 HRS)

6.5 M€

Wejherowo (20 buses, 1 HRS, 1 electrolyser)

14.1 M€

The total CAPEX of the project is estimated to sum up to **66 M€**.

Challenges and lessons learned – FC buses implementation

PDA participants intend to continue the project to implement urban transport based on hydrogen fuel. At the same time, they face important challenges.

Challenges related to the implementation of hydrogen buses:

- No hydrogen refueling infrastructure. Due to the lack of access to hydrogen to power buses in Poland, the pioneers of the new propulsion technology are looking for fuel outside the country. Hydrogen import from foreign markets is being considered as an opportunity to start up bus lines
- The lack of precise regulations on the national level is an obstacle for early adopters of hydrogen technologies
- The increase in energy prices discourages municipalities from taking bold steps to implement vehicles powered by hydrogen
- For bus operators, the subsidy is necessary at the stage of purchasing vehicles and during their operation

New knowledge and organisational possibilities for hydrogen applications emerged during the PDA project

- Conditions are emerging for increasing the supply of clean hydrogen in the short term, which will accelerate the deployment of public transport based on this fuel.
- A good strategy is to introduce hydrogen buses in several stages, which provides better opportunities to manage the change of vehicle fleet.
- Project stakeholders recognise the need to diversify and increase the type of hydrogen-powered vehicles to include those of municipal companies.
- The rapid technological development of hydrogen transport and refuelling equipment creates conditions for building new, more accessible ways of using hydrogen vehicles.

Lessons learned – PDA implementation

Important issues to support the deployment of hydrogen applications in urban transport

1

The PDA process was a good match for municipalities with an ambition to become hydrogen pioneers in a country without previous H2 projects.

2

Access to experts and H2 technology users with real-world project experience is a clear added value of the EU-level cooperation for Polish municipalities

3

It was important to combine the experience in hydrogen technologies (Spilett) with understanding of practical challenges on the local level (WiseEuropa)

4

Regulatory uncertainty and organisational capacities must be taken into account when planning the scale and speed of H2 technology implementation

Next steps for the cities



Phase 1
2023 - 2024



Phase 2
2025 - 2027



Phase 3
2028 - 2032

13 / 2

30 / 18

51 / 40

12m / #18 m buses (operated)

- Implementation of approximately 5 hydrogen-powered trains

- Launching 2 shot sea ferry connections on the Tri-City - Hel line





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Thank you for your attention

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