Description of the current state of ferries on Curonian lagoon and river service

- Klaipeda – Smiltyne (Old and new ferry terminals) – over 2 mln. passengers in 2018;
- Klaipeda (Old ferry terminal) – Sea Museum;
- Curonian lagoon passenger transportation: Klaipeda – Juodkrante – Nida;
- Kaunas – Nida – Klaipeda passenger transportation;
- Curonian lagoon leisure trips: Klaipeda – Nida, Minge – Nida.
- Passenger transportation in Klaipeda port by private companies.


- Klaipeda (Old ferry terminal) – Sea Museum;

The ferry ship „Nida“ (2006) services the Old Ferry Terminal floods. It may hold up to 700 passengers. Ferry „Kintai“ (1977), which is more like a city symbol, holds up to 477 passengers.
Curonian lagoon leisure trips: Minge – Nida
Duration 1,5 hour one side with the travel speed of 10-15 km/h.

Passenger route in Curonian Lagoon:
- Dreverna – Juodkrante – Dreverna
- Dreverna – Nida – Dreverna
- Drevena – Minge – Uostadvaris – Dreverna
- Dreverna – Juodkrante – Nida – Minge – Dreverna

Description of the current state of ferries on Curonian lagoon and river service
Klaipeda – Juodkrante – Nida

The route of the passenger catamaran „Smiltyne“ to Nida was operated by AB „Smiltynės perkela“ for four years from 2014 till 2018. High speed vessel was operating from June till September and was a popular one (https://www.klaipedainfo.lt/naujienos/smiltynes-perkela-planu-kursiu-mariose-neatsisako-taciau-siemet-i-nida-neplauk/s/).

The plans of the operator AB „Smiltynės perkela“ to renew the operation at this route the following year. (https://www.keltas.lt/2019/01/29/smiltynes-perkela-paskelbtas-naujas-konkursas-laivui-i-nida-statyti/)

Kaunas – Nida – Klaipeda passenger transportation; In 2019 passenger transportation with the high speed vessel with underwater foils was renewed. The vessel can travel at the speed around 60 km/h what is very important for this route of 240 km long (https://www.laivasraketa.lt).
As it was analyzed in “Sales market analyses Estonia, Latvia, Lithuania region” international regulations such as Kyoto Protocol and Paris climate conference are pushing decision makers to move energy and transport sector towards nature friendly development course. In Lithuania at the moment the steps toward clean transport are being implemented into the case studies and future development plans.

In Klaipeda port development study (https://www.portofklaipeda.lt/uploads/DOKUMENTAI/2018/Priedas%207.pdf) possibility for the ships, coming to peer, to receive power from shore, instead of generating it by own port generators, is foreseen. The estimations of power needs are included into the future port development and at the moment is as follows:

- Available power - 140.08 MW including 10% free reserves;
- Peak usage power - 87.50 MW;
- Average usage power - 44.11 MW.

From the figures above we see that port infrastructure is sufficient at the moment for the appearance of electric driven passenger vessels, charging in the port.
From the analysis done in “Sales market analyses Estonia, Latvia, Lithuania region” we can suppose that it could be 4 potential cases with e-mobility solutions integrated:

1. Passenger ferry transporting people between Klaipeda port and Curonian Spit. In 2019 AB “Smiltynes perkela” was announcing a tender for buying of 2 hybrid ferries for transporting around 400 passengers. There could be a need in near future to replace existing ferry operating on the line Old Ferry Terminal – Sea Museum with a smaller capacity (around 300 passenger). This ferry predominantly should be hybrid or fully electric driven.

2. Passenger transportation line that could link different parts of the city with different stops on the Curonian spit. This ferry could be a small electric driven with around 50-passenger capacity.

3. In longer perspective the ferries planned to operate between Klaipeda and Nida could be of a hybrid solution, providing the possibility to work on electricity while maneuvering and staying by the quay wall.

4. The ferry operating on the Kaunas – Nida – Klaipeda route could also use hybrid technology solutions on board.
Ferries on Curonian lagoon and river service - feasibility study
Preliminary concept development of potential electric driven ferries and river service transport

<table>
<thead>
<tr>
<th>Stop Nr.</th>
<th>Route</th>
<th>Distance, km</th>
<th>Travel time with the speed of 14 km/h, min.</th>
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<tr>
<td>1 - 2</td>
<td>Wood Terminal – New Ferry Terminal</td>
<td>6.37</td>
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<tr>
<td>2 - 3</td>
<td>New Ferry terminal – Old Ferry Terminal</td>
<td>2.43</td>
<td>10</td>
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<tr>
<td>3 - 4</td>
<td>Old Ferry Terminal – Sea Museum</td>
<td>1.57</td>
<td>6.4</td>
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<td>4 - 5</td>
<td>Sea Museum – Deep Sea Port</td>
<td>2.87</td>
<td>11.6</td>
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<td>Sum</td>
<td></td>
<td>13.24</td>
<td>54</td>
</tr>
</tbody>
</table>
Ferries on Curonian lagoon and river service - feasibility study
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- Hull type – catamaran;
- Length over all LOA – 20 m.;
- Breadth B – 6 m.;
- Draft D – 1 m.;
- Displacement – 37.9 t.
- Passengers – 48, 2 with disabilities;
- Crew – 2;
- Inland waterway vessel category: III group

Electric propulsion motors

Batteries

Wireless charging equipment