Workshop on modernisation of Danube vessels fleet

Tools supporting decisions of vessel fleet owners

18th of April 2018, Vienna
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Content

- Importance of tools
- Which tools are currently available?
- Some words on the next steps
Why tools are important

- Societal challenges create a dynamic level playing field
- Technical: solutions are provided
- Economical: checks on effectiveness
- User perspective: what is the baseline?
- Individual level: tools support individual decision making
- Collective level: support fact-based policymaking (real data)
What about theoretic assumptions?
Tools currently available

- Total cost of ownership LNG
- Greening Tool
- Econaut
TCO LNG

- Provides detailed insights to ship owners
- Currently being reviewed
- Update on default values, input from other projects
IWT Greening Tool

- Provides detailed insights into business operations
- Option to select multiple (combinations of) greening technologies
- Multilingual set-up
- Regional practices are taken into account
IWT Greening Tool

- Wizard for easy use
- Multiple vessel types available
- Engine date defines emission profile
IWT Greening Tool

- Default values serve as a starting point
- To be adjusted by cost calculator for those who would like to do so
IWT Greening Tool

Greening options
Now that you've calculated specific operating costs for your current situation, we can assess how specific retrofit greening options may affect them. Please choose options that are suitable for your vessel.

Not sure what option to choose? Check the Greening options details page first.

Propulsion improvements
Available options that affect the fuel efficiency of your propulsion system:

- Engine retrofit
  - SCR + DPF
  - LNG DF 95-5
  - FWE
  - FWE + SCR
  - GTL
  - SCR

Idle time due to installation:
- 7 days
- 21 days
- 16 days
- 15 days
- 16 days
- 7 days

Cost calculator

<table>
<thead>
<tr>
<th>Option</th>
<th>Investment - Euro in total</th>
<th>Annual costs - Euro annually</th>
<th>Installation - In days</th>
<th>Technical lifespan - In years</th>
<th>Extra fuel costs - In euros per year</th>
<th>Annual costs - In euros per year</th>
<th>Annual savings - In euros per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCR</td>
<td>175,956</td>
<td>29,640</td>
<td>7</td>
<td>6</td>
<td>14,375</td>
<td>29,640</td>
<td></td>
</tr>
</tbody>
</table>
IWT Greening Tool

Greening results
Below you will find results applicable to your situation on the basis of the information you entered in previous steps. Keep in mind that these results are only indicative. You should not make any decision before consulting an expert. Contact an expert.

Costs

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total investment - Euro</td>
<td>369,010</td>
</tr>
<tr>
<td>Installation time loss - Euro</td>
<td>18,808</td>
</tr>
<tr>
<td>Maintenance + Interests - Euro annually</td>
<td>15,024</td>
</tr>
<tr>
<td>Fuel costs change - Euro</td>
<td>28,750</td>
</tr>
</tbody>
</table>

Comparison
The table below shows the results for both the current situation of your vessel and the situation after applying specific greening options.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Current</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total costs - Euro annually</td>
<td>1,465,892</td>
<td>1,029,171</td>
</tr>
<tr>
<td>Fuel costs - Euro annually</td>
<td>574,592</td>
<td>603,742</td>
</tr>
<tr>
<td>Emissions/Emissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2 - in kg per year</td>
<td>1,149.964</td>
<td>1,207.483</td>
</tr>
<tr>
<td>NOx - in g/kWh</td>
<td>10.80</td>
<td>4.32</td>
</tr>
<tr>
<td>PM - in g/kWh</td>
<td>0.62</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Now that you have completed this run tool feel to use the options to Download the results (pdf) or share the results by email. Please note the shared links are time limited and anyone who has the shared link can access the result.
Econaut

- For Android, iOS, [www.econaut.nl](http://www.econaut.nl)
- Easy to use
- Same method applied to everyone
- Distance, fuel, tonnes
- Green Award certification scheme
- Possibility to integrate with AIS, RIS

EIBIP | European Inland Barging Innovation Platform
ÜBERBLICK März 2018

Durchschnittliche CO2 Emissionen

33.65
Gramm/CO2/TONNE/HEKM

Vergangener Monat
27.8
Gramm/CO2/TONNE/HEKM

Durchschnittliche CO2/Gesamt
91182.96
CO2/Gesamt KG

Gesamttonnage
10048.0
Tonne/GELOTONE

Gesamtstrecke
3072.0 km
Next steps

- Hosting by EICB: options for independent monitoring
- Market insights visitor preferences
- Policy support by fact based emission performance monitoring
- Instrumental to incentive schemes

- Greening Tool → i-Steer application (Prominent)
- TCO LNG → LNG Breakthrough
- Econaut → EIBIP
Questions?

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