The Case of ARKTIK – A system innovation for sustainable mobility from Germany

Frank Tietze
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In daily routines, a private person can easily influence car emissions, while other emission sources are more difficult to affect.

Did you know?

In order to generate the same impact than offsetting the annual car emissions an average German car driver would need to spend …

… 6 years without warm water*

… 20 years without electric light*

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* Ø annual energy consumption of single household for lighting and warm water (VDEW); ** private consumption includes purchase of convenience products, food but also a new car; *** public overhead means emissions resulting from governmental investments distributed equally among all German inhabitants.

Data for calculation of carbon offsetting potential based on Bavarian Federal Environmental Agency; Source: German Federal Environmental Agency (2009)
ARKTIK is model to integrate CO$_2$ offsetting into the daily routines of car drivers

- A model for everybody who **needs** to drive a car
- 100% offsetting **precisely** based on actual fuel consumption
- Automated, directly **at the fuel station**
- **Convenient** solution comparable to usage of other debit- or credit-cards (socially accepted)
- Leveraging **strategic buying power** of car drivers for subsidiaries of offsetting costs
- Allows car drivers to take responsibility of CO$_2$ emissions by **internalizing negative effects** of car usage
- A **temporary solution** until e-mobility is available on a large scale
- **Externally certified** offsetting process (TÜV Nord)

www.arktik.de
ARKTIK is an innovation for sustainable mobility integrating related stakeholders into a system facilitating climate protection.

Counteracting the tragedy of the CO₂ commons: Internalizing external costs through a voluntary but convenient offsetting model.

After market launch in December 2009, ARKTIK started to attract customers all across Germany.

ARKTIK fuel stations across Germany
As of March 2010

- **Coverage of fuel stations:**
  - ~10% of German fuel stations (~530), primarily in urban areas
  - ~30% expected (~2,700 stations) by June 2010

- **Partnerships:**
  - Recommended by B.A.U.M. e.V. – German Environmental Management Association
  - Largest German car magazine (Auto BILD) is officially offsetting all test drives with ARKTIK

- **Extensive media attention e.g. in**
  - TV/Radio: 3sat, Vox, NDR Info
  - Press: TV-TODAY, STUTTGARTER ZEITUNG, SONNTAG AKTUELL, Bild, WESER KURIER, SPIEGEL ONLINE, AUTO Bild, SR ONLINE.DE, Motorrad-fahrer, sh:z
The ARKTIK model was developed in 2008 based on extensive insights from climate sensitive users

Quantitative survey of car drivers

- Market survey of 1,000 car drivers
- During Summer 2008
- Representing the population by age and sex
- Questionnaire conducted through online-panel of market research agency

Addressing the question: What do customers prefer?

Creativity workshops

- 6-8 participants with affinity towards ‘biological’ products
- Conducted by renowned depth-psychologists

Addressing the question: How to address customers?

The ARKTIK Report provided a comprehensive facts validating the potential of ARKTIK and was used to identify critical customer preferences
The study revealed that a large share of car drivers would offset CO\textsubscript{2} emissions if an adequate solution would be available

Representative survey (n=1,000 German car drivers), 2008

<table>
<thead>
<tr>
<th>Willingness to act</th>
<th>Synthesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willingness to make a personal contribution to climate protection.*</td>
<td>CO\textsubscript{2}-offsetting is an accepted mean to fight climate change.</td>
</tr>
<tr>
<td>90%</td>
<td></td>
</tr>
<tr>
<td>High commitment to offset CO\textsubscript{2}-emissions.*</td>
<td>Opportunities to offset emissions mostly unknown to car drivers.</td>
</tr>
<tr>
<td>72%</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Wish to act</th>
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<tbody>
<tr>
<td>Have actively searched for offerings to offset own emissions.</td>
<td>Opportunities to offset emissions mostly unknown to car drivers.</td>
</tr>
<tr>
<td>28%</td>
<td>71%</td>
</tr>
<tr>
<td>Know at least one offset-service provider.</td>
<td>Existing offerings are known to climate-conscious car drivers.</td>
</tr>
<tr>
<td>20%</td>
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<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>Have used an existing offering to offset emissions.</td>
<td>Existing offerings for CO\textsubscript{2}-offsetting yet not accepted by majority of car drivers</td>
</tr>
<tr>
<td>6%</td>
<td></td>
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<table>
<thead>
<tr>
<th>Market potential</th>
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<tbody>
<tr>
<td>Would use product to offset own emissions that fulfills needs</td>
<td>The potential for market conforming offsetting solutions is enormous</td>
</tr>
<tr>
<td>48%</td>
<td></td>
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*Top 2 answers: “definitely”, “probably”
Source: ARKTIK Report
**To develop an integrated solution ARKTIK identified critical customer preferences**

**Relevance ranking of factors that are important for car drivers in choosing compensation models**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trustworthiness</td>
<td>87</td>
</tr>
<tr>
<td>Costs</td>
<td>84</td>
</tr>
<tr>
<td>Transparency</td>
<td>81</td>
</tr>
<tr>
<td>Credibility</td>
<td>80</td>
</tr>
<tr>
<td>Prompt offsetting after purchase</td>
<td>77</td>
</tr>
<tr>
<td>Not in responsibility of petrol compa.</td>
<td>64</td>
</tr>
<tr>
<td>Assortment of climate projects</td>
<td>62</td>
</tr>
</tbody>
</table>

**Which factors motivate customers to switch the fuel station?**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferably low offset costs</td>
<td>66</td>
</tr>
<tr>
<td>Integrated in the purchase process</td>
<td>44</td>
</tr>
<tr>
<td>Via a card model</td>
<td>40</td>
</tr>
</tbody>
</table>

* Car drivers stating to compensate CO$_2$ emissions "likely" or "most likely"  
Source: ARKTIK Report  
- Representative study of 1,000 car drivers  
- In depth customer and creativity workshops
**For flight bookings the online model is most convenient, but hardly suitable for fuel consumption at fuel stations**

<table>
<thead>
<tr>
<th>Preference criteria of customers <strong>choice</strong> *</th>
<th>Air travel</th>
<th>Car</th>
<th>Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneously at purchase</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Integrated in purchase process</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Without extra efforts</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Optional usage / Choice at each purchase</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Precisely based on actual consumption</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Transparent and trustworthy</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Tangible experience in everyday life</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

**Existing offsetting models**

**Observations:**

- **Air travel**
  - Online booking is an established model to compensate.
  - E.g. 8% of all online ticket purchasers compensate CO₂ emissions.

- **Car**
  - The internet is the least preferred model for car drivers. *But: Online calculators are hardly convenient for offsetting car emissions.*

- **Car**
  - ARKTIK represents a customer oriented model.
  - **45%** would prefer those petrol stations that offer offsetting with a product such as ARKTIK.*

*Sources: * Customer and expert interviews, ARKTIK Report, 2008; ** e.g.. Austrian Airlines, TUIfly
Leading climate experts approve and support the ARKTIK model

“I am a member of ARKTIK, although I do not drive a car anymore. Offsetting CO\textsubscript{2} emissions from cars has the potential to become a valuable tool for everyday’s climate protection along with offsetting emissions from air travel and clean energy.”

Prof. Dr. Hartmut Grassl
Former Director at the Max Planck Institute for Meteorology
ARKTIK has implemented user preferences in its offsetting model

1. Transparent and independent pricing (offsetting charges are strictly separated from fees)
2. No benefits for ARKTIK from fuel consumption

Offset charges precisely calculated based on actual customer consumption*

Monthly fixed membership fee

* The offsetting process is certified by TÜV Nord
All elements translate into an integrated system innovation to facilitate sustainable mobility

1. ~50% cost sharing
2. Integrated in the ‘classical’ purchase process
3. Joining forces with neutral institutions
   - Externally certified by TÜV Nord
   - Partnering with NGOs e.g., B.A.U.M. e.V. – German Environmental Management Association
   - External constant exchange with leading climate experts e.g., from Max Planck Institute for Meteorology
4. Strong company values
   - Using only GoldStandard VERs
   - Fair, transparent, independent
   - Trustworthy and credible
   - Commitment to convenience
5. Leveraging buying power to purchase VERs
6. Partnering with leading offset firms e.g., FirstClimate, an international integrated carbon asset management company
The ARKTIK model creates mutual benefits for all stakeholders

The climate
1. Internalization of external costs
2. Raised awareness among German car drivers leading directly to CO₂ conscious driving and direct CO₂ reduction

Car drivers
1. Exact and consumption equivalent CO₂ offsets
2. Convenient way to offset CO₂ emission integrated in ‘classical’ purchasing process
3. Cost sharing with cooperating oil companies
4. Joining forces to leverage strategic buying power to generate offsetting subsidies

Cooperating oil companies
1. Leverage of existing fuel card models and loyalty card infrastructure allows quick implementation of ARKTIK model
2. Climate engagement as means to participative responsibility
Future steps – Challenges for growing the ARKTIK model

1. For policy makers
   1. In Germany offsetting is often recognized to much as “selling of indulgences”. ARKTIK and other stakeholders should promote it as taking responsibility for internalizing external costs

2. For ARKTIK
   1. Winning further cooperation partners to extend market coverage and to increase the convenience for customers
   2. Developing complementary products (e.g., pre-paid cards, loyalty models)
   3. Developing other products to which precise consumption equivalent offsetting can be translated (e.g. printing)
   4. Focusing on specific models for B2B customers
   5. Expanding into new markets, e.g. Austria, Switzerland, USA, …
Thank you for your attention!

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