


Market strategy for Styria, Lower Austria, Austria

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Are there existing filling stations and natural gas and biogas driven cars already in the region?	Yes

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Summary

By 2010 we are expecting between 100 and 130 cars per fuelling station in Styria. As we are planning to build up approximately 20 stations until 2010 we expect at least 2,500 – 3,000 cars on the road.

A target for the whole gas industry in Austria is to reach 50,000 cars in 2010 as well as 240 fuelling stations. That means that governmental initiatives (tax security, financial support programs, reduced tax on natural gas and bio-methane) have to support the introduction of NGVs.

There are 109 filling stations and app. 2,350 NGV (April 2008) in Austria

- Styria (14 CNG filling stations; 235 NGVs)
- Lower Austria (12 filling stations; app. 100 NGVs)

Market partners in the regions are energy agencies and the local gas supplier, some car dealers and local partners and the association for car drivers.

The Federal ministry for the environment launched a program called “klima:aktiv mobility” with the aim to reduce CO₂ emissions in the transport field. Financial support is up to 30 % of investment costs (additional costs to implement the CO₂ reduction measurement).

Furthermore mainly all gas suppliers are offering different incentives for the purchase of NGVs (free fuel or bonus).

Biogas plants:

In the Styrian region there are 44 biogas plants (November 2007) which are mostly used to produce electricity.

In Styria we have an electric production about 20 MW.

In Austria the total electric power by means of biogas plants is around 80 MW.



Sales of conventional fuels:

The main fuels used in Austria are petrol and diesel. Alternative fuels only account for a very small share. Because of the EC as well as national implementations the amount of conventional fuels should and will be substituted through alternative fuels. The national sales of mineral oil products within the transport sector in Austria amounts 2005 and 2006 as follows:

Table 1: National sales of mineral oil products in Austria 2005

Source: Winter (Biokraftstoffe im Verkehrssektor in Österreich, 2007)

Fuel	National total sales in 2005 (in t)	National total sales in 2006 (in t)
Unleaded normal petrol (91<=ROZ<95)	545.331	512.703
Unleaded petrol (95<=ROZ<98) „Super“	1.467.054	1.423.229
Unleaded petrol (98<=ROZ) „Super Plus“	61.054	56.096
Diesel without bio-share	4.755.597	353.169
Diesel with bio-share	1.508.539	5.801.416
Total	8.337.575	8.146.613

In the year 2006 at 94 % of the sold diesel fuel 4,7 volume percent B100 was mixed. In total 288.500 t of mixed and 32.500 t of pure biodiesel was brought to the market. Furthermore 10.000 t of pure plant oil was used in the agricultural sector. This equals a substituted energy content of approximately 3.54 %. Therefore the goal of the „Kraftstoffverordnung“ (2,5 % of the energy content) was reached.

Amount of vehicles 2006 (Statistics Austria)

By **31.12.2006** in Austria in total 5.722.624 vehicles were admitted. This is 1,3 % (75.742 vehicles) more than the year before. Out of the 4.204.969 passenger cars the amount of diesel cars was 52,8 % (2.220.804 vehicles). Within the statistics 2006 the amount of electric vehicles (127) and the category “other propulsion” (701) is listed. There is no separate registration of natural gas vehicles by Statistics Austria.

Amount of vehicles 2007 (Statistics Austria)

By **31.12.2007** in Austria 5.796.973 vehicles in total were admitted for the traffic. This is again 1,3 % more than in the year before. The amount comprises 4.245.583 passenger cars, 419.650 agricultural vehicles, 353.744 heavy vehicles and 345.491 motorbikes. The motorisation grade was 511,6 passenger cars per 1.000 inhabitants. Out of the 4.245.583 passenger cars the amount of diesel cars was 53,8 % (2.283.302 vehicles). 40,0% of the total vehicle stock can be found in Lower and Upper Austria.

Within the statistics 2007 the amount of electric vehicles (131) and the category “other propulsion” (1.770) is listed. There is no separate registration of natural gas vehicles.

The CNG vehicle increase over the past years was considerable. The average growth rate over the past 7 years amounted to 12,9 % in Europe and 42,2 % in Austria.

Contents

Introduction/Background 4

Analysis of the different aspects of the gas market 7

Analysis of the surroundings 7

Market inquiry 8

Analysis of the concept “methane gas as vehicle fuel” 8

Analysis of competitive products 9

Analysis of costumers/consumers 10

Short and long term threats and possibilities 13

Bottlenecks on the gas market 13

Market Strategy 14

Message 14

Choice of target group and distribution strategy 14

Introduction/Background

General description of the market

Manufacturer: only suppliers for the automotive industry (MAGNA)

Importer: All major automotive brands have a business unit in Austria

Car reseller/service: They are now in the build up phase; all major car resellers with NGVs in the program already start their programs to educate their sales and technical staff for NGVs. A training program will be offered by ÖVGW.

Gas production in Austria: gas imported: 60 % Russian gas, 20 % local production, 20 % Norwegian gas. In total 8 billion m³

Gas supplier: In Austria there are 10 major gas suppliers (e.g. OMV, StGW, EVN, Wien Energy, Salzburg AG)

Filling stations: The building up of the station will be supported by means of third party financing.

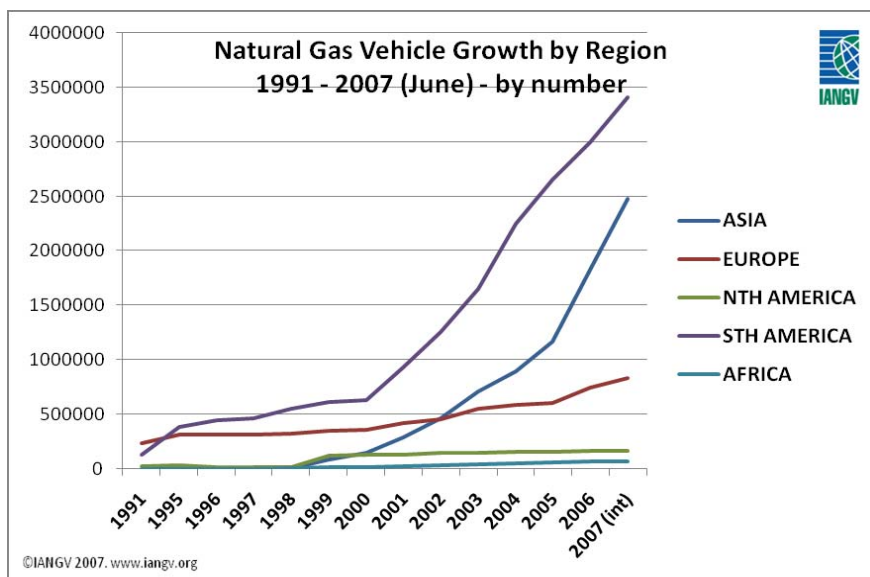
Fuel propellant: mainly bivalent or monovalent plus vehicles (max. 15 l of petrol tank). This is determined from the automotive industry.

Legal framework: not available but recommendation in the Austrian governmental program. The same is valid for municipalities and provincial governments.

Competitors: major gas suppliers have established co-operations for a common development of the market. The national associations also support the government to build up a legal framework concerning the use of CNG.

How has the concept and the market developed in the region, which phase has it reached?

We are now in the build up phase. See market growth in the graph below. The CNG vehicle increase over the past years was considerable. The average growth rate over the past 7 years amounted to 12,9 % in Europe and to 42,2 % in Austria of average annual stock of vehicles growth.



Regional Growth		Jun-07	2006	2005	2004	2003	2002	2001	2000
EUROPE	NGV Numbers	832.381	742.108	601.005	585.253	547.549	454.328	418.241	360.911
	% growth on previous year	12,2%	23,5%	2,7%	6,9%	20,5%	8,6%	15,9%	
Average growth in past 7 years		12,9%							

For a further boost of the market it is important to achieve a greater variety of vehicles models.

Regarding filling stations the whole area of Austria is covered since 2003 and now we are in the compression phase.

A clear development of the general taxation for gas as a vehicle fuel is missing. Furthermore there are unclear legal framework conditions. The new NOVA, defined in the “Ökologisierungsgesetz” supports NGVs with a bonus of up to 500 Euro.

Have there been any critical episodes/incidents for the “methane gas as vehicle fuel concept” on your market?

No.

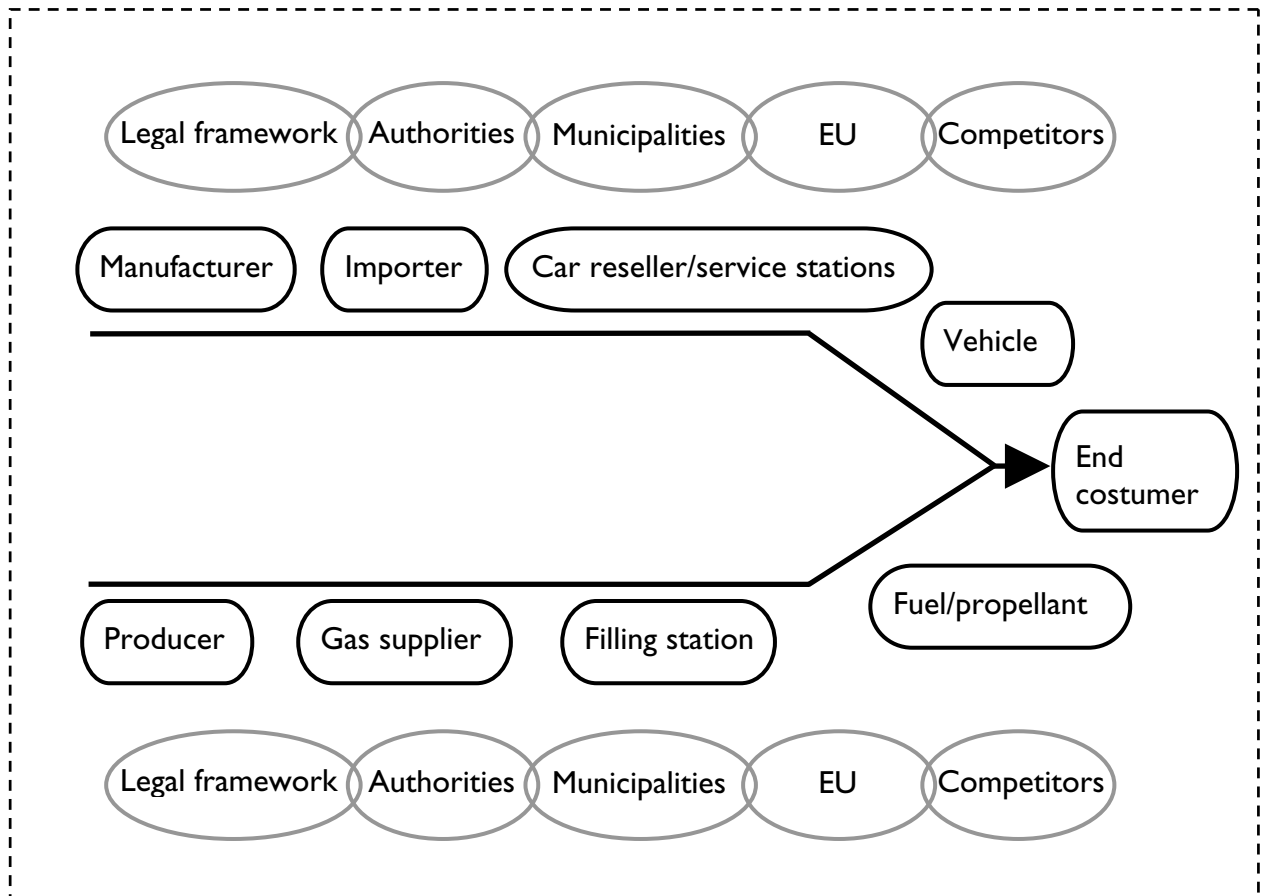


Figure 1. An overview of the gas market and its actors. From producers of gas and vehicles to the end customer.

Analysis of the different aspects of the gas market

Analysis of the surroundings

Are there any factors in the surroundings (Juridical, economical etc.) that have influence on the production, distribution and use of methane gas in vehicles in a positive or negative direction?

The more favourable Normverbrauchsabgabe NOVA (duty payable on standard consumption) for NGVs acts as a positive factor, the exemption from the mineral oil tax (Mineralölsteuer Möst) is itself positive, but has also got a negative aspect since there is no long term tax security given in Austria until now.

5-point action plan

In 2006 the Federal Ministry of Agriculture, Forestry, Environment and Water Management has joined forces with the utility OMV to launch a 5-point action plan designed to encourage the use of natural gas and biogas as fuel.

This action plan is in line with and will work towards EU targets of replacing 20% of transport fuels with alternative fuels by 2020. Specific targets include an increase in natural gas vehicle (NGV) numbers from 650 currently to more than 50,000 by 2010 and increasing refueling station numbers from 32 currently to 200 in the same time frame.

The plan includes: a commitment from the government to maintain fiscal and tax advantages for natural gas over gasoline and diesel until 2020; encouraging the use of 20% biomethane content; creating incentives for the use of NGVs in public and commercial fleets, including mandating the use of NGVs for ministry vehicles; mandating infrastructure development and easing technical and legal conditions for their establishment, and; working towards developing appropriate standards for biomethane fed into the gas grid.

CO₂ reduction programs (subsidies)

While the federal government does not promote the purchase of a natural gas driven vehicles, a few individual Austrian federal provinces, towns and municipalities as well as natural gas companies offer different subsidy models. In most cases, these subsidies refer to the new purchase of natural gas driven vehicles and/or the conversion of vehicles to natural gas operation. An updated overview of the different subsidies can be found at http://www.oeamtc.at/index.php?type=article&menu_active=27&id=1119176.

Companies that plan to switch their fleets to natural gas may apply for subsidies with Kommunalkredit Austria AG (special-purpose bank entrusted with the management of the environmental support schemes of the Republic of Austria and the Environment and Water Management Fund). Up to 30% of the investments are subsidised.

There are several climate programmes of Austrian federal provinces including Lower Austria which support the feed in of biomethane into the natural gas grid as well as the market development of natural gas and biomethane as a vehicle fuel.

Are there any political standpoints, for example decisions made to promote the use of alternative fuels in the transport sector? Or maybe the opposite?

The increase of gas as a vehicle fuel is one overall goal of the governmental program 2007-2010 (five point program)

When looking at biogas production, how does it look with the access of raw materials to the biogas process?

Different projects are investigating this topic (e.g. which raw materials can be used, where should upgrading plants be located).

Market inquiry

How has the market for production of biogas, distribution and use of natural gas and biogas in vehicles developed over time?

Market increase:

Biogas = The first non public biomethane filling station for vehicles is called METAPHUR and is placed in Lower Austria (St. Margarethen am Moos). The biogas plant in St. Margarethen runs on energy plants with a capacity of 250 m³ gas/h and 500 kW electrical output. There is an upgrading process (one step membrane process) to provide fuel for the filling station.

The plan is to have 20 METAPHUR filling stations in Austria within one year. If calculating 250 cars per filling station that would mean 5.000 cars can be fed with all METAPHUR filling stations soon. The idea of METAPHUR makes sense if there is no natural gas network near by.

Total produced biogas in Austria: Estimated amount of biogas lies between 265 to 414 mil. cubic meters per year. Taking the estimated amount of 414 mil. Nm³ per year with an average consumption of 1.200 nm³ per vehicle and year we would be able to run 345.000 vehicles in Austria (one vehicle – 1.200 nm³ = 15.000 km per year).

This means that 2.350 vehicles with an average consumption of 1.200 nm³ per year will actually use 2.820.000 nm³. A number of 50.000 vehicles, which is the goal for 2010, would consume 60 mil. Nm³.

Are there any clear trends on the market, for example a growing share of clean vehicles etc.?

There is no trend visible. But estimates promise an increase of NGVs. (50.000 vehicles in 2010).

Analysis of the concept “methane gas as vehicle fuel”

There is a test plant for the production of bio-methane and the feed in to the natural gas grid. In Pucking (upper Austria). The capacity is around 6 m³/h. Furthermore there is an industrial plant which is located in lower Austria (Bruck/Leitha – capacity 150-200 m³/h from waste) which goes in operation by beginning of 2008. More detailed figures are not available today.

Biogas production plants in Styria: 44 plants (November 2007)

Biogas plants in Lower Austria: 59 plants (2006)

Which factors are unique for the concept “methane gas as vehicle fuel” that distinguishes the concept from the other available fuels on the market?

Filling infrastructure will be built by gas suppliers. Through CO₂ neutral bio-methane natural gas as a fuel can be substituted. Natural gas and bio-methane have the same quality. This technology is bridging the way to hydrogen.

Which are the strengths and weaknesses of the concept? (in the region)

Strengths:

- Regional availability of biogas
- Environmentally aspects (CO₂, NO_x and pm 10)
- Economically aspects
- Natural gas can be substituted by bio-methane (same quality)
- Transport via existing gas grid
- Noise reduction and without smell
- Closed tank system
- Safety aspects
- Subsidy for CO₂ reduction

Weaknesses:

- Variety of NGV models
- Availability of raw material for biogas production
- Driving range of vehicles
- Effectiveness of engines
- Lack of know how
- Awareness of customers (low advertisement of car sellers)
- European fuelling station network

Are there any financial advantages or disadvantages with the concept compared to the competitive fuels (both the traditional and alternative fuels)?

See above

Are there any technical advantages or disadvantages with the concept of using gas in vehicles in the region?

–

Is the use of natural gas and biogas in vehicles associated with a distinctive image in the region? For example, is it seen as a fuel for those with certain interest in climate, health and environment? Do companies see it as goodwill to use methane gas in vehicles?

Yes.

Analysis of competitive products

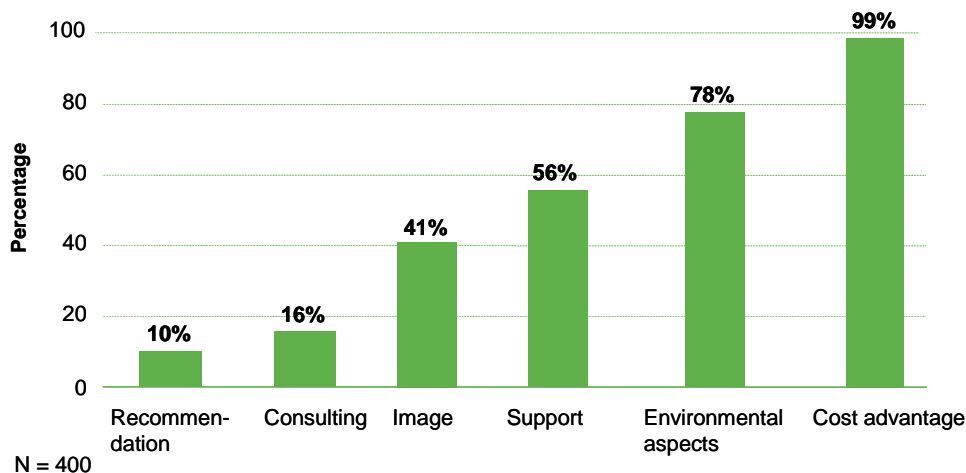
Which products is methane gas competing with on the market? – petrol, diesel, ethanol/E85 etc.

Methane gas is competing with petrol and diesel.

Analysis of costumers/consumers

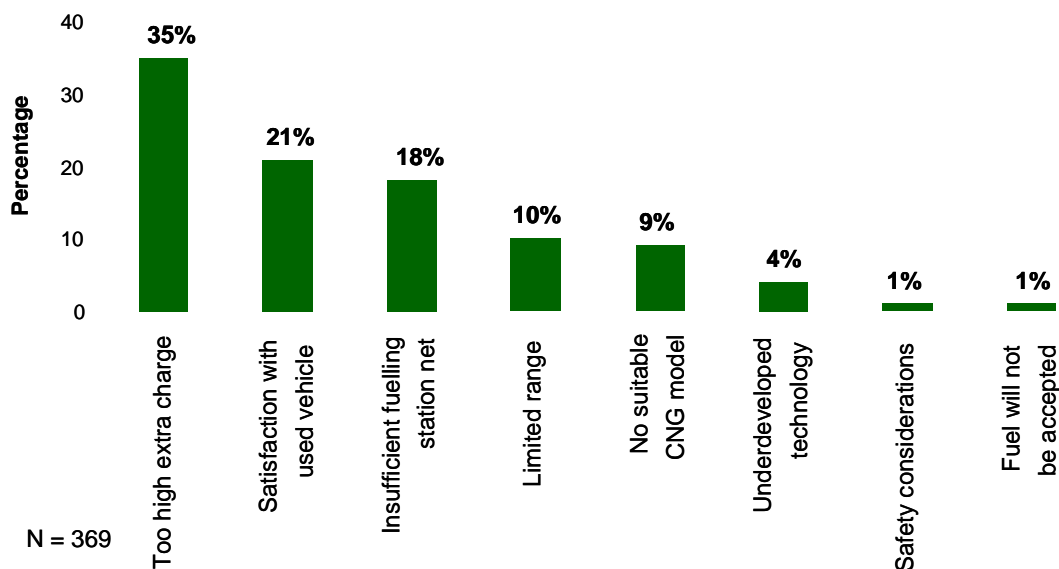
Which experiences have been made from costumer behaviour in the region, which factor(/s) have been crucial for costumers or suppliers to choose NGVs and CNG?

Influences on the decision to buy an NGV



It is clearly visible that the economic aspect – the cost advantage is mostly important for customers to decide for an NGV. The second important point is environmental aspects with 78 %.

Reasons for rejection:



The most important reason for rejection is the too high extra charge for a NGV. Also the satisfaction with the vehicle in operation as well as the underdeveloped fuelling station network are important factors for the rejection of a natural gas vehicles.

Which attitudes and values exist on the market? (can gas driven vehicles fulfil these values?)

In Austria a study about the acceptance of gas driven vehicles was executed by ÖAMTC academy in 2007. The study was carried out in group discussions with 10 participants of 3 different age groups. The associations of the consumers can be stated as follows:

Positive:

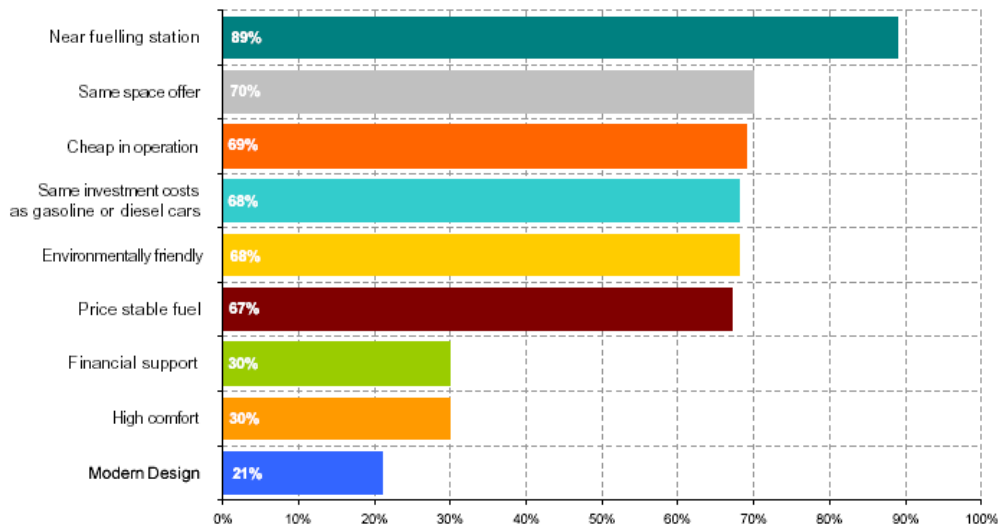
- Better environmental performance
- More quiet in operation
- Positive cost effects

Negative:

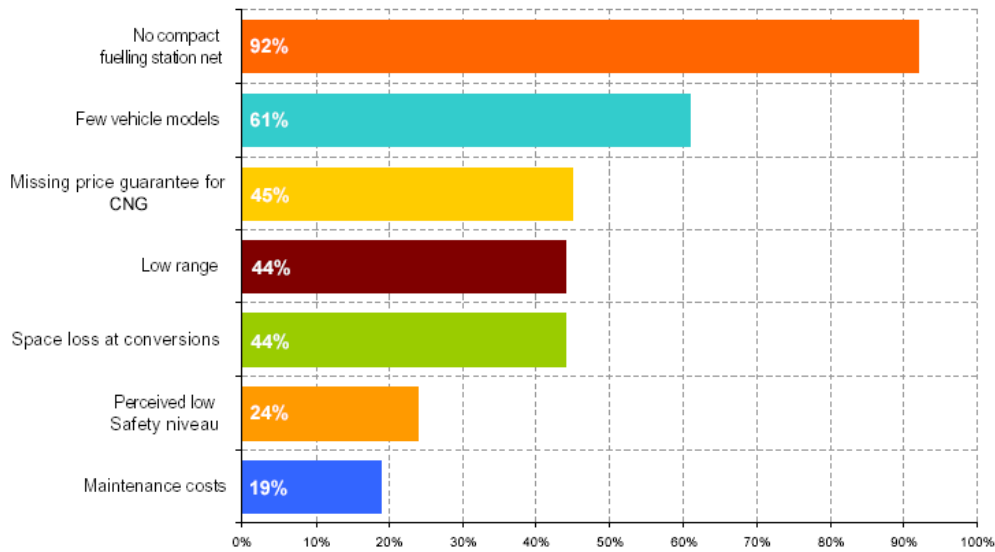
- Weak fuelling station network
- Finiteness of natural gas
- Lower safety
- Higher investment costs
- Lower range/mileage
- Narrow range of car models
- Higher space volume needed for fuel tank
- In some places it is forbidden to use underground parking

Furthermore an online study with 1.269 participants was executed from the same organisation in the year 2006. 99 % were already car owners, 83 % male. 51 % had an average mileage of 10.000 to 20.000 km per year.

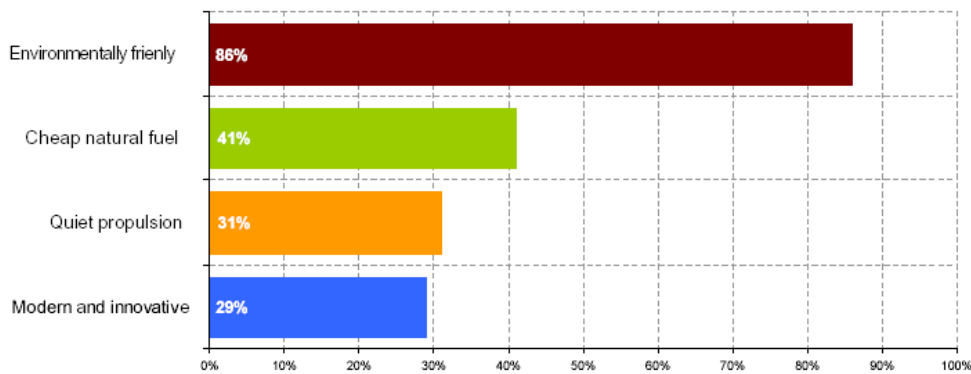
The motives for the purchase of a NGV are the following:



Barriers of the purchase of CNG cars:



Motives for CNG as a fuel:



Are there any preconceptions on the market? For example about low second hand value of NGVs, difficulties with fuelling stations, short operating range of NGVs, safety issues, etc.

- Safety issues
- Second hand value
- Fuelling infrastructure
- Technology is not ripe

How is the costumers' knowledge of biogas, and natural gas (All aspects from production, distribution, and use in vehicles)?

Little knowledge, therefore MADEGASCAR!

Short and long term threats and possibilities

Are there any arguments for producing biogas, distribute natural gas or biogas, or using the gas in vehicles that might change over time, or even fade away?

- Lack of variety of vehicles will disappear – instead conversion of existing vehicles will increase (in cooperation with the car importer)
- Decreasing availability of oil; high oil price
- Increasing importance of climate change measures

Bottlenecks on the gas market

Are there any bottlenecks on the gas market? Follow the distribution link from the producers to the end customer and localise which actors on the market that are suppressing the gas market development/expansion. Can this/these groups be processed in the MADEGASCAR project? Are these groups the projects target groups in the region?

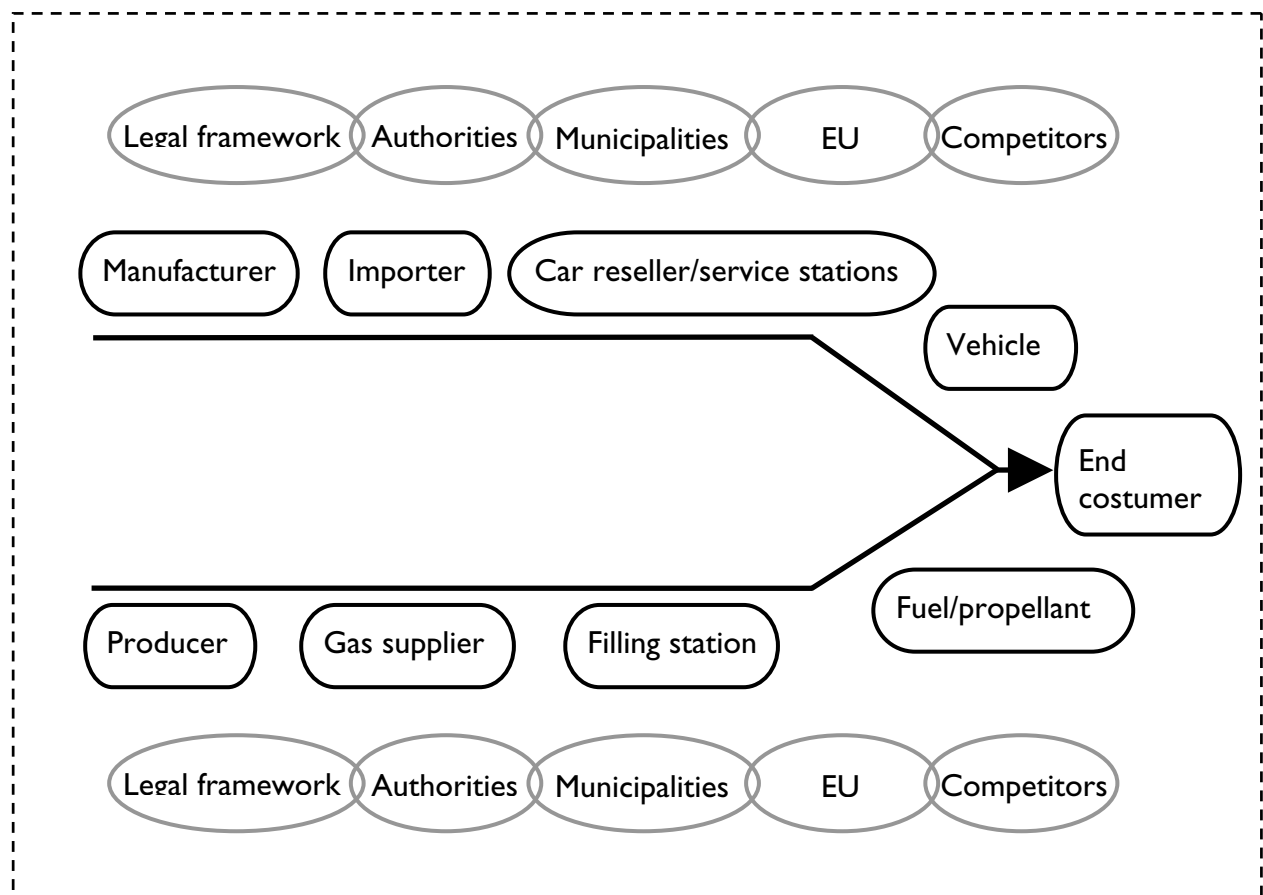


Figure 2. An overview of the gas market and its actors. From producers of gas and vehicles to the end customer.

Market Strategy

Message

The gas concept policy we are promoting and the image we are sending out include economical and environmental aspects as well as the possibility to use waste and agricultural by-products.

For example:

- Natural gas – an alternative fuel which is cheaper than petrol or diesel and has better environmental features, which is widely available in Austria and the most neighbouring countries and has got no negative features in terms of security or convenience
- Biomethane – an environmental friendly renewable vehicle fuel which helps us to use waste and agricultural by-products in a appropriate way

Choice of target group and distribution strategy

Vehicle expansion

50.000 NGVs in 2010 Austrian wide

- *Target groups*

We approach all target groups but regarding different aspects:

Customer class A: face to face contact

Customer class C: mailings

(see also Del. 4.1 and 5.1.)

Biogas supply

As we don not make a differentiation between natural gas and bio-methane we actually follow the same market strategy as for the expansion of NGVs.

The only difference is that we highlight that the use of bio-methane reduces CO₂ by nearby 100% and that the production does have a regional input.

Gas grid expansion

The gas grid is in Austria well established.

Filling station expansion

Lower Austria: One filling station in every district

280 filling stations in Austria in 2010

40 filling stations in Styria until 2010