

NGV Africa

Volume III Number 11 March 2014

Egypt diversifies CNG application for vehicles

Mobile restaurant with CNG



5th NGVA Europe International Show & Workshops



Drive the change: bio CNG & LNG – the green, affordable and real alternative for all transport modes

7-10 July | Brussels Belgium

 info@ngv2014brussels.com
 www.ngv2014brussels.com

An event of



Endorsed by



Hosted by



Sponsor Gold



Organized by





CRYOBOX

Now, **LNG** can
drive your projects.

With the Cryobox Nano Station, you can produce your own LNG and enjoy the benefits of this cost-effective clean fuel. This is possible because Cryobox is an integrated plug-and-play module, which is easily transported, avoids gas venting and thus obtains full gas utilization while protecting the environment.

Meet the LNG pioneers at www.galileoar.com



GALILEO

Natural Gas Technologies

NGV Africa

NGV Africa is a publication of NGV Communications Group, a publishing house and fairs-conferences organizer, which website is www.ngvjournals.com. Since 1988 promoting natural gas vehicles.

Offices in CH'UNCH'ON (Korea), MARMIROLO (Italy), LIMA (Peru) and BUENOS AIRES (Argentina). Six magazines that reach the whole world: GNV Latinoamérica, Prensa Vehicular Peru, Asian NGV Communications (Greater Asia), The Gas Vehicles Report (Europe, United States and Canada, etc), Prensa Vehicular (Argentina) and NGV Africa.

We speak about NGV in 16 languages and to over 100 countries.

The signed articles are exclusive responsibility of the authors, as well as advertising companies and agencies are responsible for the published ads.

gnv Latinoamérica

NGV Journal

Prensa Vehicular Perú

Asian NGV Communications

Prensa Vehicular

The GVR

NGV communications group

KOREA

300-5, Changchon-Ri • Namsan-Myun
Chuncheon-Si • Kangwon-Do • 200-911
Tel. +82 33 260 3419
Fax. +82 33 260 3459
asia@ngvgroup.com • www.asiangv.com

ITALY

Vicolo Gonzaga 13 • 46045 Marmirolo (Mn)
Tel.: +39 0376 294055
info@thegvr.com • www.thegvr.com

ARGENTINA

Uspallata 711 • CP 1268
Ciudad Autónoma de Buenos Aires
Tel./Fax: +54 11 43074559 /5201/ 43006137
info@prensavehicular.com
www.ngvjournals.com

PERU

Av. Brasil 3222 oficina 403 •
A Magdalena del Mar •
CP: Lima 17 • Perú peru@prensavehicular.com
www.ngvjournals.com

NGV JOURNAL

www.ngvjournals.com / www.ngvjournals.us

Summary

- 4 South Africa and Egypt, Africa's most active NGV countries
- 8 New Horizons for CNG in Egypt
- 9 Egypt NGV SWOT analysis update
- 10 South African CNG market is bound to flourish
- 11 A new gas bill
- 11 SANERI's CNG project
- 12 C-Ply composite technology allows aircraft to fly on CNG
- 12 GE Energy's business will deliver CNG dispensers to Sochi 2014 Winter Olympics
- 13 Audi A3 g-tron goes on sale in Germany
- 14 WEH® Nozzle-Hose-Assemblies for installation at natural gas fuelling stations
- 15 NGV statistics
- 16 Worldwide NGV statistics

Distribution Coverage

The hard copy of NGV Africa is sent to 324 postal addresses from 21 African countries addressed to governmental related offices, OEM and Oil & Gas companies, associations, related NGV industries, refuelling stations, workshops and suppliers, according the following list (some figures rounded):
Algeria
Benin

Cameroon
Comoros
Egypt
Ghana
Guinea-Bissau
Guinea
Kenya
Liberia
Mozambique
Namibia
Nigeria
Rwanda
Senegal
Sierra Leone
South Africa,

Tanzania
Tunisia,
Uganda,
Zimbabwe

In addition, the magazine is sent to over more than 17,000 in 94 countries by e-mail (.pdf) and is also online in www.ngvjournals.com
Enter this new market!
To publish and advertise with us, contact ngvafrica@ngvjournals.com

WE MAKE THE WORLD GO ROUND



LANDI RENZO. A KEY PLAYER IN THE WORLD OF SUSTAINABLE MOBILITY.

We have a goal: helping make the world go round in the right direction.

We lead the way in technologies for environmentally friendly mobility, producing vehicle components for alternative fuels, LPG and natural gas.

In more than 50 years in the business our technologies have helped make LPG and natural gas fuelled vehicles increasingly popular. Today we continue to open up new horizons with research into ways of using new fuels such as hydrogen.

We do all this in 50 countries on all 5 continents, working with the world's biggest automotive companies.

We want to maintain our position of prominence on a rapidly growing market, responding to the increasingly urgent demand for sustainable development.



LANDIRENZO®
Alternative mobility



South Africa and Egypt, Africa's most active NGV countries

Egypt's mobile restaurant with CNG

After successfully implement fuel switching from petrol and diesel to CNG in public transport and companies fleets, Egypt now diversify the conversion to mobile restaurants. A demonstration project is currently on the way, in which, a vehicle that is used to sell food converted to CNG system. It is expected that similar vehicles across Egypt will be retrofitted to the "clean" CNG technology.

On the other hand, the government is forced to promptly deal with the persisting issue related to the cost of energy subsidy. Liquid fuel subsidy continues to increase, from LE 114 billion for Fiscal Year (FY) 2011/2012 to around LE 130 billion for FY 2012/2013. Thus, Minister of Petroleum Sherif Ismail recently underlined the key importance of the adoption of new and renewable energy sources such as solar and wind power, as well as the utilization of unconventional fuel resources like shale gas. It is estimated that approximately 500 trillion cubic feet of shale gas is stored under Egypt's land; of which 100 trillion cubic feet are technically fit for exploration and development.

South Africa and the Blue Corridor

With government support, related organization and private companies support and/or investment, South Africa has taken the interest of the Blue Corridor program. Below notes are mainly published in the BlueCorridor.org to promote and highlight the promising potential of CNG-for-transport market development in this country.

South Africa's first commercial NGV dispensing station was established in November 2013 in the city of Ekurhuleni by gas company Novo Energy, in collaboration with a number of stakeholders such as fleet owners, public transport operators and pertinent government agencies. So far, the taxi



industry has seen some of the most economic benefits of using natural gas in transportation, with an estimated yearly savings of about USD18.5 million. Even more stations are planned for 2013, spreading the uptake of natural gas as a transportation fuel in South Africa.

Although adoption of compressed natural gas (CNG) as a transport fuel is only beginning in South Africa, a number of NGV-focused initiatives are currently underway:

- The Benoni Taxi Association (BTA), which operates in the state of Gauteng, has committed to converting at least 20% of its fleet to CNG by 2014. Approximately 385 taxis and buses are fueled by CNG in the state, which contains the city of Johannesburg.

- The South African government's National Climate Change Response program pushes for CNG use and emphasizes the importance of the transportation sector's role in lowering greenhouse gas emissions.

- The Industrial Development Corporation encourages the use of biogas and CNG-fuelled taxis and buses in public transportation and funds associated infrastructure development projects through the Green Energy Efficiency Program.

- The South African National Energy Research Institute collaborates with

energy company as part of an ongoing initiative to help establish a CNG infrastructure for the automotive industry. Apart from CNG, purified biogas (so-called biomethane) is also chosen to power Natural Gas Vehicles (NGVs), especially in Pretoria, a city in the northern part of Gauteng Province. Gauteng Province is also the place where South Africa's first CNG filling station (opened for private fleets) is located.

Meanwhile, Johannesburg is also becoming a center for NGV-related events: the Institute for International Research's Gas Week 2013 was held there, and the NGV 2014 South Africa www.ngv2014southafrica.com/wp/ will also take place in the city on 18-20 November of 2014.

What's next for natural gas as a transportation fuel in Africa?

There are a number of public and private initiatives underway to increase the NGV population and necessary infrastructure in South Africa. Both will be key to advancing the use of clean natural gas in transport, not just in South Africa, but across the entire continent.

The next country Blue Corridor will address in our series on natural gas as a transportation fuel in Africa is also in the early stages of developing its NGV market: Morocco. Stay tuned for more!

L'Afrique du Sud et l'Égypte, contrées les plus actives d'Afrique en NGV

Restaurant mobile en Égypte

Après avoir implémenté avec succès le passage de l'essence et du diesel vers le CNG au sein des flottes de transport public et des compagnies, l'Égypte maintenant se diversifie en réalisant la conversion de ses restaurants mobiles. Un projet de démonstration est actuellement en route par lequel un véhicule utilisé pour la vente de produits alimentaires a été converti pour l'utilisation du CNG. Il est attendu que des véhicules similaires seront convertis à la technologie "propre du CNG" partout en Égypte.

Par ailleurs, le gouvernement est obligé de s'occuper rapidement du problème persistant des subsides relatifs au coût de l'énergie. Les subsides accordés aux carburants liquides continuent à augmenter de 114 milliards de LE pour l'année fiscale (FY)2011/2012 à environ 130 milliards de LE pour FY 2012/2013. En conséquence le ministre du pétrole Sherif Ismail soulignait récemment l'importance clef de l'adoption de nouvelles sources d'énergies renouvelables telles que la puissance du soleil et du vent aussi bien que l'utilisation de ressources de carburants non conventionnels comme le gaz de schiste. Il est estimé qu'approximativement 500 trillions de cubic feet de gaz de schiste sont stockés dans le sous-sol égyptien dont 100 trillions de cubic feet sont techniquement adaptés à la recherche et au développement.

L'Afrique du Sud et le Blue Corridor

Avec le support du gouvernement, celui de l'organisation précitée ainsi que le support et /ou l'investissement de compagnies privées, l'Afrique du Sud a saisi l'intérêt du programme du "Blue Corridor". Des notes ont été principalement publiées dans le BlueCorridor.org en vue de promouvoir et souligner le potentiel promis du CNG dans le cadre du développement du marché du transport dans cette région.

La toute première station de fourniture commerciale de CNG d'Afrique du Sud a été ouverte en novembre 2013, dans la ville de Ekurhuleni par la société du gaz Novo Energy, en collaboration avec un nombre de partenaires tels que des propriétaires de flottes, des opérateurs de transports publics et des agences gouvernementales compétentes. Ainsi, l'industrie du taxi a vu quelques-uns des bénéficiaires les plus économiques par l'utilisation du gaz naturel dans le secteur du transport avec une estimation de bénéfices annuels de 18,5 millions de \$ US. Plusieurs stations ont été planifiées en 2013 permettant ainsi la fourniture de gaz carburant pour le transport en Afrique du Sud.

Quoique l'adoption du gaz naturel comme carburant (CNG) en Afrique du Sud soit récente, un nombre d'initiatives ciblées sur le NGV sont entreprises.

- La Benoni Taxi Association (BTA) qui opère dans l'Etat de Gauteng a décidé de convertir au moins 20% de sa flotte au CNG durant 2014. Approximativement, 385 taxis et bus roulent au CNG dans cet Etat qui englobe la ville de Johannesburg.
- Le programme National Climate Change Response du gouvernement de l'Afrique du Sud insiste sur l'usage du CNG et met en avant l'importance du rôle que joue le secteur du transport dans l'abaissement des émissions de gaz à effet de serre.
- L'Industrial Development Corporation encourage l'utilisation du biogaz et du CNG par les taxis et les bus du transport public et subsidie les projets de développement de l'infrastructure au travers du Green Energy Efficiency Program.
- Le South African National Energy Research Institute collabore avec les sociétés d'Énergie dans le cadre d'une initiative en cours afin d'établir une infrastructure CNG pour l'industrie automobile.

Mis à part le CNG, le biogaz purifié (appelé biométhane) est aussi choisi



pour alimenter les NGVs et cela plus spécialement à Pretoria, une ville dans la partie nord de la province de Gauteng. C'est également dans cette province que la première station de fourniture de CNG a été localisée à destination d'une flotte privée.

Par ailleurs, Johannesburg est devenue aussi le lieu où se déroulent les événements relatifs aux NGVs. L'institut pour la Recherche International a tenu le Gaz Week 2013 et le NGV 2014 se tiendra donc en Afrique du Sud.

www.ngv2014southafrica.com/wp/ prendra place à Johannesburg, du 18 au 20 novembre.

Qui a-t-il encore à dire au sujet du gaz naturel comme carburant en Afrique ?

Il y a un nombre d'initiatives publiques ou privées en cours pour accroître la population des NGVs ainsi que l'infrastructure. Tout deux sont la clef pour développer l'usage du gaz naturel "propre" dans le transport non seulement en Afrique du Sud mais partout sur le continent.

La prochaine région du Blue Corridor qui va se présenter dans nos séries sur le gaz naturel comme carburant et qui est aussi au début du développement du marché du NGV est : le Maroc. Restez branchés pour en savoir plus.

Zuid Afrika en Egypte, de meest actieve NGV landen van Afrika

Egyptes mobiele restaurants met CNG

Na een succesvolle overschakeling van benzine en diesel naar CNG, in het openbaar vervoer en bij bedrijf 's automobiel vloten, gaat Egypte nu de overschakeling van deze brandstof ook uitbreiden naar de conversie van mobiele restaurants.

Een demonstratieproject is momenteel onderweg, waarbij een voertuig dat wordt gebruikt om voedsel te verkopen omgezet zal worden naar CNG. Verwacht wordt dat soortgelijke voertuigen in Egypte worden omgebouwd naar de "schone" CNG technologie.

Aan de andere kant, is de overheid gedwongen om een oplossing te vinden voor de kosten die de brandstof subsidie met zich mee brengen. De subsidies op vloeibare brandstof blijven toenemen, recent van LE 114000000000 voor het fiscale jaar (FY) 2011/2012 tot ongeveer LE 130 miljard voor het boekjaar 2012/2013. Mede ten gevolge daar van onderstreepte onlangs de minister van Petroleum, Sherif Ismail, het grote belang van de invoering van nieuwe en hernieuwbare energiebronnen, zoals zonne- en windenergie, evenals het gebruik van onconventionele brandstoffen zoals schaliegas.

Naar schatting is er circa 500 miljard kubieke voet aan schalie gas reserves in de Egyptische bodem, waarvan 100 biljoen kubieke voet zijn technisch geschikt is voor de exploratie en ontwikkeling.

South Africa en de "Blue Corridor"

Met steun van de overheid, met betrekking organisatie en de ondersteuning en/of investeringen van privé-bedrijven, heeft Zuid-Afrika het belang van de Blue Corridor programma omarmd. Onderstaand enkele korte berichten uit de BlueCorridor.org die dit doel hebben het veel belovende potentieel van het

ontwikkelen van een cng-transportmarkt te bevorderen en benadrukken:

Zuid-Afrika's eerste commerciële NGV verdeelstation werd opgericht in november 2013 in de stad Ekurhuleni, door gasbedrijf Novo Energie, in samenwerking met een aantal belanghebbenden, zoals fleetowners, openbaar vervoerbedrijven en relevante overheidsinstaties. Tot nu toe heeft de taxi-industrie het meeste economisch profijt behaald, door de door gebruik te maken van aardgas in het transport, met een geschatte jaarlijkse besparing van ongeveer USD 18,5 miljoen. Nog meer nieuwe stations zijn gepland voor 2013, ter ondersteuning van de verdere overschakeling op aardgas als transport brandstof in Zuid-Afrika. Hoewel het gebruik van gecompriëerd aardgas (CNG) als transportbrandstof net pas is begonnen in Zuid-Afrika, zijn er toch al meerdere op NGV - gerichte initiatieven in gang gezet:

- De Benoni Taxi Association (BTA), die actief is in de staat van Gauteng, heeft toegezegd tenminste 20% van haar vloot te converteren naar CNG in 2014. Ongeveer 385 taxi's en bussen rijden nu op CNG in de staat Gauteng, die de stad Johannesburg omvat.

- Het National Climate Change Response programma van de Zuid-Afrikaanse regering propageert het gebruik van CNG en benadrukt het belang van de rol van de transportsector in het verlagen van de uitstoot van broeikasgasen.

- De Industrial Development Corporation moedigt het gebruik van biogas - en CNG - aangedreven taxi's en bussen in het openbaar vervoer aan en stelt fondsen beschikbaar voor verwante infrastructurele ontwikkelingsprojecten middels het Green Energy Efficiency Program.

- Het Zuid-Afrikaanse National Energy Research Institute werkt samen met energiebedrijven als onderdeel van een lopend initiatief om een CNG - infrastructuur voor de auto-industrie te ontwikkelen.



Afgezien van CNG, wordt gezuiverd biogas (zogenaamde bio methaan) vooral in Pretoria, (gelegen in het noordelijke deel van de provincie Gauteng) ook ontwikkeld als brandstof voor Natural Gas Vehicles (NGVs). Provincie Gauteng is ook de provincie waar het eerste CNG-tankstation in Zuid-Afrika (particuliere vloten) is gevestigd.

Ondertussen is Johannesburg ook steeds een centrum voor NGV - gerelateerde evenementen : de Gas week 2013 van het "Institute for International Research" werd daar gehouden en de NGV 2014 Zuid-Afrika www.ngv2014southafrica.com/wp/ zal ook daar plaatsvinden op 18-20 november 2014.

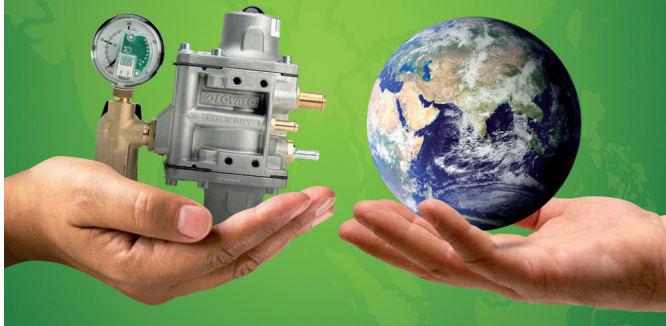
Wat biedt de toekomst voor aardgas als transportbrandstof in Afrika?

Er zijn een aantal openbare en particuliere initiatieven aan de gang om het aantal NGV voertuigen uit te verhogen en de noodzakelijke infrastructuur in Zuid-Afrika verder uit te breiden.

Beide zijn belangrijk bij de het bevorderen van het gebruik van schone aardgas in het vervoer, niet alleen in Zuid-Afrika, maar over het hele continent. De eerst volgende Landen Blue Corridor, in onze serie over aardgas als transportbrandstof in Afrika, zal gaan over een land dat ook in een vroeg stadium is in de ontwikkeling van de NGV markt: Marokko. Volgende keer meer hierover!

FROM ITALY TO AFRICA,
WITH THE BEST
NGV TECHNOLOGY

LOVATO
LET THE BLUE DRIVE YOU



**The complete range
of CNG refuelling solutions.**

✓ Fleets ✓ Home ✓ Filling Stations



www.brccompressors.it



www.brcfuelmaker.it



www.cubogas.com

Launching a pilot project to adopt CNG in restaurant mobile vehicles

New Horizons for CNG in Egypt

To diversify the applications of the CNG for vehicles in Egypt, a pilot project was launched aiming at powering mobile restaurants with CNG.

CNG cylinders and conversion kits were installed in a model vehicle to demonstrate CNG adaptability. Big demand is expected to come from all over the country. It is anticipated that various mobile restaurants will be converted especially since CNG is highly economical compared to liquid fuels as well as being environment friendly. The construction of relevant standards of operations & safety is currently underway. Releate authorities involve in the making of the norms include EGAS and affiliated NGV companies.

On the other hand, several CNG stations are expected to be constructed within this year. Projects relates to this will be the realization of business agreements previously concluded in 2013, which were formed by companies or authorities operating fueling stations.

The agreements incorporate the installation of CNG fueling services in petrol stations plus a part regarding gas sales and vehicles conversion. Given the skyrocketing prices of lands fit for the stations, the NGV companies are driven to incorporate the CNG filling services within existing petrol stations. Hence, CNG dispensing facilities were added to fueling stations affiliated to TOTAL, the state-owned "Misr Petroleum & Co-Operative" companies and National Petroleum Company affiliated to the Armed Forces.

Targeting yet to cross the borders and capitalize its genuine experiences accumulated since the mid-90s, Egypt's major NGV company Gas Tec. sought tendering to execute NGV projects in other countries. Countries being eyed include those in the Emirates that recently took stride in this field, aiming at retrofitting its fleets to natural gas.

Pursuant yet to the stable NGV growth, NGVs in Egypt reached 198,852 by end of December 2013 with 172 stations and 73 conversion centers.

The lingering issue of energy subsidies urges the government to look for cheaper energy sources as the price of liquid fuels subsidy amounted to LE 114 billion for fiscal year 2011/2012 and about LE 130 billion for 2012/2013.

In a recent statement, the Egyptian



Mobile restaurant powered by CNG



Headquarters of the major NGV company in Egypt, Gas Tec.



Cylinder-testing process in one of Gas Tec's cylinder-testing centers; Gas Tec. is the sole company in Egypt affording such service.

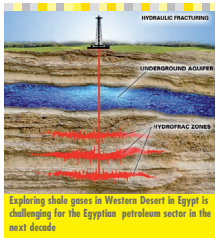
Minister of Petroleum, Eng./Sherif Ismail referred that the state subsidizes daily both diesel with LE 180 million and the petrol with LE 100 million. He reiterated the importance for a prompt adoption of new & renewable energy sources like solar power and wind as

well as shale gas. According to foreign estimates, Egypt has around 500 trillion cubic feet of shale gas, of which 100 trillion cubic feet are technically fit for exploration and development .

"By: Hamdy Kamal, Gas Tec, Egypt"



Egyptian Minister of Petroleum, Eng./Sherif Ismail



Exploring shale gases in Western Desert in Egypt is challenging for the Egyptian petroleum sector in the next decade

Egypt NGV SWOT analysis update

Strengths

- Environmental aspects, poor air quality
- Low CNG price
- Egypt's potential gas reserves (60-120 trillion cubic feet)
- Available country standards
- Credit payment system of vehicle conversion
- Government subsidies for liquid fuels
- Potential export opportunities for liquid fuels
- Highly qualified labor & experts.
- Strategic national project (in three phases)
- New applications for CNG as a clean energy.



Weakness

- High cost of fuelling station (all equipment is imported)
- Fluctuating exchange rate
- Scarcity of land
- Governmental administration in issuing license
- Poor CNG awareness
- Local OEMs do not produce dual CNG/liquid fuel engines
- Business is government controlled
- Lack of strong government support to expand utilization of CNG.



Opportunities

- Global environmental concerns
- New vehicles segments e.g. fleets, private cars
- Replacement of diesel vehicles by dual fuel (gas/gasoline) vehicles.
- Long-term petroleum price increase
- Increase in industry demand for liquid fuels
- More government support
- New applications for utilizing CNG as an alternative clean energy.



Challenges

- Optimize economics of CNG refuelling station
- Attract new business segments to CNG (e.g. private, diesel, etc)
- Local manufacture of components (kits, compressors, etc)
- Introduce new diesel conversion technology
- OEMs to produce bifuel and CNG dedicated vehicles.
- Market deregulation
- Gas network development
- Government declaration of decrees to support the CNG industry and generalize CNG utilization.



Thanks to: Hamdy Kamal, Gastec

South African CNG market is bound to flourish

National Energy Regulator of South Africa (Nersa) has underlined that while the growth of the compressed natural gas (CNG) market in South Africa has been slow, it is steadily picking up, especially in the transport sector.

Piped gas regulation executive manager of Nersa, Nomfundo Maseti, last year outlined the various CNG projects and initiatives that are ongoing in South Africa. The CNG market can flourish, but it also depends on supply growth and government support. The market could expand to other provinces in South Africa as there are already an existing pipeline infrastructures in KwaZulu-Natal, Mpumalanga and the Free State. Government initiatives and funding were already under way since 2013.

These initiatives include the National Climate Change Response flagship program, which has advocated CNG use and recognized the transport sector's role in contributing to the reduction of greenhouse gas emissions in South Africa. The Industrial Development Corporation has also promoted the introduction of biogas- and CNG-powered taxis and buses for public transport and will fund any associated infrastructure development projects through the Green Energy Efficiency Programme.

Moreover, the South African National Energy Research Institute (SANEDI) has been partnering with energy company Virtual Gas Network (VGN), a division of CNG Holdings and CNG Technology, since 2009, in an ongoing initiative to help establish CNG infrastructure for the automotive industry.

CNG infrastructure in South Africa is still insufficient, however, compared with its pipelined counterparts, despite the long-term benefits it may yield in contributing to the objective of reducing carbon dioxide emissions.

Local access to gas supply is also a challenge facing the growth of CNG in South Africa, as it can take between 18 and 24 months for distributors to complete a supply contract with main gas supplier Sasol Gas.

Maseti believes Sasol's monopoly on supplying gas to the local market hinders market growth, as the price charged by Sasol Gas is, at times, not competitive, according to CNG traders.



"Further, compared with conventional liquid fuel, it costs more to set up CNG facilities in terms of training, storage and dispensing facilities," she said at the event.

Other challenges facing the CNG sector in South Africa include the public's negative perception regarding the safety of CNG and users at commuter level often confusing CNG with LPG.

Nevertheless, growth is steadily on the rise. So far, about 385 Gauteng-based taxis and buses have been converted to run on CNG, with the Benoni Taxi Association (BTA) committing to convert at least 20 percent of its fleet within this year (2014).

Besides ongoing initiatives by licensed local CNG traders, VGN and Natural Gas Vehicles, both owned by CNG Holdings, integrated gas company Novo Energy launched South Africa's first commercial CNG dispensing station in November last year, offering the City of Ekurhuleni the opportunity to use an alternative fuel source for transport.

Novo Energy partnered with several stakeholders, including public transport operators, fleet owners and related government sectors to initiate the project, but says the taxi industry has realised more value through the regular use of CNG as an alternative fuel, including economic benefits and longevity of their vehicle assets, through operating their vehicles with a cleaner fuel.

The price of CNG, which is currently R8.66 a liter, averages 30 percent less than conventional fuel equivalents, and Novo Energy reports that the average daily spend on fuel for a taxi driving over 300 km daily, is R600, as reported at the Engineering News.

Meanwhile, the BTA spends a daily average of R2.5-million on fuel for its fleet, which adds up to R619-million in yearly spend.

Considering these statistics, Novo Energy spokesperson Kgakgamatso Phatlane said that the BTA's prospected yearly saving on fuel through the use of CNG will, therefore, amount to R185-million.

Following the COP17 CPMP7 conference in 2011, among other commitments, South Africa committed to championing innovative solutions to introduce cleaner alternative fuels, thereby reducing carbon emissions.

Novo Energy has, therefore, risen to government's call by opening the first commercial NGV dispensing station in the City of Ekurhuleni offering comparable services to conventional petrol and diesel stations.

The company says using CNG as an alternative fuel source for vehicles has been encouraged by original equipment manufacturers, such as Tata, Volkswagen South Africa and Mercedes-Benz South Africa, which are conducting feasibility studies for introducing dedicated NGVs onto the South African market.

A new gas bill

The Gas Amendment Bill, to be tabled in Parliament in 2014, aims to provide for the orderly development of South Africa's gas industry and changing technologies in the sector.

Last year, the South African Cabinet approved the Gas Amendment Bill 2013.

The Amendment Bill aims to address the loopholes, omissions and challenges experienced in the process of implementing and enforcing the Gas Act by the Department of Energy and the National Energy Regulator of South Africa.

It is also meant to promote and facilitate gas infrastructure development and investment. It will review compliance, monitoring and enforcement in the natural gas sector, to incorporate new transportation technologies of natural gas as well as other unconventional gases not included in the current Gas Act. It seeks to support mobile gas storage through regulations to enhance health and safety matters.

In the Bill "Gas" means – all hydrocarbon gases (transported by pipeline), including natural gas, artificial gas, hydrogen rich gas, methane rich gas, synthetic gas, coal bed methane gas, liquefied natural gas, compressed natural gas (CNG), regasified liquefied natural gas (LNG) and liquefied petroleum gas (LPG) or any combination of these.



South Africa is in the midst of a heated energy debate. Africa's wealthiest nation sits on top of one of the world's largest shale gas reserves. The world is waiting for the President of South Africa, Jacob Zuma, to address the country's shale gas policy.

SANERI's CNG project



The South African National Energy Research Institute (SANERI) is hosting a Green Transport Programme. Part of it is Compressed Natural Gas (CNG), a clean alternative fuel that can be used to power the transport sector.

CNG has been used for many years across the globe as an alternative energy source and fuel for vehicles. CNG has thus been identified by the program as one of the eco-friendly fuels to promote and help in setting up the conversion and refuelling infrastructure. At the moment South Africa's CNG automotive industry is almost non-existent. SANERI has partnered with industry to help set up the CNG infrastructure. One of the partners is CNG Holdings. This is a company that is committed to promote the use of Natural Gas and provide the required technology to achieve this goal.

Its activities regarding CNG include a demonstration program with conversions of petrol vehicles to CNG system, to be refueled at Langlaagte CNG filling station

In 2011, Vehicle branding experts, Graffiti, recently branded 14 energy-efficient vehicles in bold green: two belonging to SANERI's Green Transport Centre and 12 owned by the Gauteng Province Department of Roads and Transport (G-Fleet), as part of the Gauteng Province's Green Transport initiative.

This green branding exercise is aimed at highlighting the fact that each of the 14 vehicles are eco-friendly and operate on Biodiesel, Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG).

At that time, South Africa's first CNG filling station at Langlaagte, South of Johannesburg City has been servicing four CNG vehicles.

By end of May 2010, there were already 10 vehicles converted under SANERI's program plying in South Africa. Those include:

- ▶ G-Fleet belong to Gauteng Department of Transport
- Toyota Corolla
- Corsa Lite
- Volkswagen Golf 4
- Volkswagen Golf 1
- ▶ Riverlea Taxi Association
- Toyota Hi-Ace
- ▶ Private owned minibus
- Toyota Quantum
- ▶ SANERI's own fleet
- Mercedes Benz C200
- ▶ Volkswagen / MAN bus
- ▶ Two units of Barloworld Equipment Company
- 1.8 ton forklifts
- ▶ After that, four units of Riverlea Taxi Association, a passenger vehicle, and a 2.5-ton forklift of Barloworld Equipment were converted.

SANERI's Green Transport Centre is a one-stop facility for information sharing, technology development and technology demonstration and deployment in relation to the use and testing of alternative fuels and vehicles. The newly-branded vehicles have been converted to utilize 'green' alternatives and have been branded in the most startling and attention-grabbing of greens to make them difficult to miss and to essentially take SANERI's green transport message where traditional media may have failed to reach.

C-Ply composite technology allows aircraft to fly on CNG

French company Chomarat, working with the US firm VX Aerospace, has developed the VX-1 KittyHawk, a 1:4 scale blended wing aircraft fabricated with Chomarat's C-Ply thin-ply, low-angle advanced composite reinforcement.

The VX-1 KittyHawk aircraft is designed by VX Aerospace and fabricated with C-Ply, Chomarat's thin-ply, low-angle advanced composite reinforcement material.

A unique shape with no wings for a reduced carbon footprint

What makes KittyHawkTM so different from other aircraft is its shape: it has no wings! The fuselage and wings are combined into one shape called a 'lifting body' or 'blended wing' aircraft. The aircraft features a blended wing design, which offers greater usable internal volume, greater payload capability, better structural efficiency, better durability and better



VX-1 KittyHawk, a 1:4 scale

manufacturability. The construction is thus facilitated as this design will have fewer parts and will therefore be easier to assemble, according to Chomarat. In addition, the aircraft can be scaled to accommodate the intended mission. Manned or unmanned, the VX-1 KittyHawk's massive internal volume is a huge advantage.

"The volume will also allow KittyHawk to lead the way in adopting CNG as an aviation fuel." Existing technology CNG cylinders fit inside the aircraft with no aerodynamic compromise. At less than one-third the cost of avgas, the KittyHawk

will have unparalleled operational economy with emissions that are 40 percent cleaner," says Bob Skillen, VX Aerospace CEO.

Flight testing of the KittyHawk will begin in March. A 1:4 scale version of the aircraft will be on display at JEC Europe 2014 in Paris this March.

Chomarat is an international group in textile innovation. The composite brand provides a large spectrum of technical reinforcements (glass, aramid, carbon), especially designed to match a variety of composite process requirements for a broad range of applications.

» WEH® CNG FUELLING SOLUTIONS

Top quality for maximum **RELIABILITY**

WEH offers a wide range of NGV1 compatible products for safe and easy CNG vehicle refuelling:

- » Fuelling Nozzles
- » Receptacles
- » Breakaways
- » Check Valves
- » Filters
- » Hoses

WEH®
We Engineer Hightech

» www.weh.com

NGV
journal.us

THE NEW ONLINE **NGV** NEWSPAPER
DEDICATED EXCLUSIVELY TO **US & CANADA.**

One of the most attractive markets worldwide can be yours.

Buy your banner and conquer all of its potential!

www.ngvjournal.us - sales@ngvjournal.us

GE Energy's business will deliver CNG dispensers to Sochi 2014 Winter Olympics

Wayne announced it has been selected to supply the technology that will serve fleet and passenger vehicles, as well as buses transporting athletes and spectators. The Wayne Global Star™ CNG X11-11 fuel dispenser was displayed during a ceremony at the fueling site for the Games. Russian government officials have recommended a natural gas fueling option at all fuel retail sites in the country, with the Olympic site in Sochi as a pioneer location.

"Our rich history of CNG expertise, along with our ability to provide leading technology in durable dispensers built for any climate, have uniquely positioned us to provide environmentally-friendly fuel initiatives for major events such as the Olympic Winter Games," said Neil Thomas, Wayne Global President. "We are very pleased to serve the world's best athletes and fans in Sochi."

Wayne has previously delivered fueling technology and equipment for the Olympics. Two years ago the Wayne Helix™ fuel dispenser was the official fuel dispenser of BP's "Fuelling the Future" Showcase in London during the 2012 Olympic and Paralympic Games.

"We are proud to support the alternative fueling efforts at



the Sochi 2014 Olympic Winter Games and the infrastructure needed for Sochi to deliver cleaner, cost-effective, environmentally friendly fuel solutions," added Andrei Belomestnykh, General Manager, Wayne, Russia and CIS.

Source: GE

Audi A3 g-tron goes on sale in Germany

Advance sales at dealerships in the country kicked off on February 13, the automobile manufacturer has reported. The Audi A3 g-tron forms part of a new, integrated and sustainable mobility concept from the brand with the four rings. Its 1.4-liter TFSI engine developing 81 kW (110 hp) can be operated using either natural gas, e-gas generated by Audi or gasoline. In pure e-gas mode the g-tron is entirely CO₂-neutral.

Audi e-gas is synthetic methane produced at the Audi e-gas facility located in Werlte in Lower Saxony, Germany – the world's first industrial power-to-gas plant. An A3 Sportback g-tron fueled by Audi e-gas is currently the most environmentally friendly form of long-distance mobility. This is because the process for generating Audi e-gas using green electricity binds as much CO₂ as is released when the Audi A3 g-tron is driven in gas mode. On average the Audi A3 g-tron consumes between 3.2 and 3.3 kilograms of gas per 100 kilometers. Fuel costs at present start at around 3.50 euros per 100 kilometers.

The buying principle for Audi e-gas is straightforward and corresponds to how green electricity is distributed: Audi records the quantities of gas that the customer pays for using their Audi e-gas fuel card and ensures that exactly this amount of e-gas is fed into the German natural gas network.

Customers who choose this option can obtain an Audi e-gas fuel card for a flat price of 14.95 euros per month. In addition, the costs for the quantities of gas refueled by each customer are deducted via the Audi e-gas fuel card. The card can be used to purchase Audi e-gas at over 650 fuel stations in Germany.

Prof. Dr. Ulrich Hackenberg, Board Member for Technical Development at Audi AG, emphasizes: "In addition to our e-mobility developments, the Audi e-gas project is an important pillar of our sustainability strategy – as is the development of other synthetic fuels."



Source: Audi AG.

Company and product

WEH® Nozzle-Hose-Assemblies for installation at natural gas fuelling stations



WEH offers complete and fully functional CNG refuelling assemblies for cars, buses and trucks. Each assembly consists of a fuelling nozzle, hose and breakaway coupling ready for turnkey installation at fuelling stations. Assembled and certified - the complete solution! The Nozzle-Hose-Assemblies come preassembled according to customer specifications. Our customers may specify the length of the filling hose and choose from a variety of CNG fuelling nozzles and breakaway couplings based on their application requirements. The breakaway couplings can be assembled for installation directly to the dispenser or as an 'in-line' part of the hose assembly. The individual refuelling components all feature high flow rates, short filling times and



high-grade manufacturing materials.

WEH® Nozzle-Hose-Assemblies are designed for fastfill CNG fuelling of vehicles at self-service stations and meet the requirements of the Pressure Equipment Directive PED97/23/EC.

Contact: WEH GmbH Gas Technology - Josef-Henle-Str. 1 - 89257 Illertissen - Germany - www.weh.com

Contact Person: Birgit Burkhart
Phone: +49 (0) 7303 95190-21
eMail: presseinfo@weh.com



NGVAfrica

NGVAfrica is quarterly journal that cover stories and information on natural gas vehicle related issues in the African region. Editorial Outlook: Objective reporting, comments from main NGV players and stakeholders, and statistics in Africa.

ngvafrica@ngvjjournal.com
www.ngvjjournal.com

Media Profiles 2014

JULY

Edition: 9

Deadline: June 20th

Special report:
Vehicle conversion segment

NOVEMBER

Edition: 10

Deadline: October 3rd

Special report:
NGV 2014 South Africa
With extra magazine distribution in the events

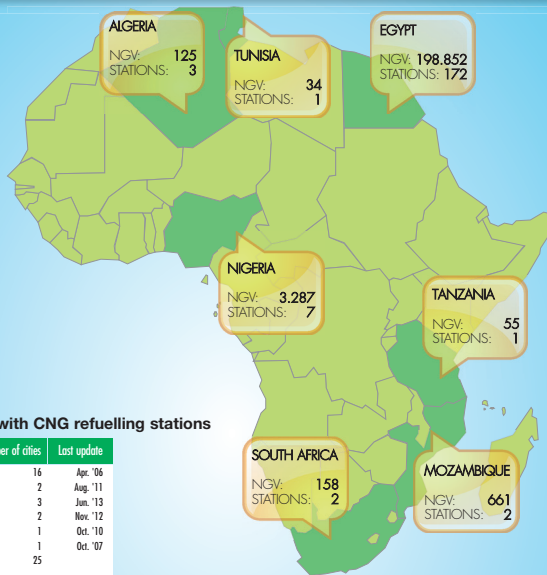
DECEMBER

Edition: 11

Deadline: November 27th

Special report:
The balance of NGV2014
South Africa expo: Market response

NGV statistics



Cities with CNG refuelling stations

Country	Number of cities	Last update
Egypt	16	Apr. '06
Mozambique	2	Aug. '11
Nigeria	3	Jun. '13
South Africa	2	Nov. '12
Tanzania	1	Oct. '10
Tunisia	1	Oct. '07
Total	25	

Natural Gas Vehicles

Country	Natural Gas Vehicles					Refuelling stations				Monthly gas consumption (M Nm ³)		Last update
	Total	Cars/LDV's	MD/HD buses	MD/HD trucks	Others	Total	Public	Private	Planned	The consumption in theory	Reported consumption	
Algeria	125	115	10			3	3				0,05	December 2011
Egypt	198.852	197.206	1.299		347	172	168	4		46,85	39,41	December 2013
Mozambique	661	500	150		11	2		2	2	0,24	0,54	July 2012
Nigeria	3.287	3.000		287		7	7				0,77	August 2013
South Africa	158	21	136		1	2	2		2		0,41	October 2013
Tanzania	55	55				1	1		2		0,01	August 2013
Tunisia	34	32	2			1		1			0,01	December 2007
Africa	203.172	200.929	1.597	287	359	188	181	7	6	47	41	February 2014

Notes: The column 'theoretical monthly consumption' is calculating total monthly consumption if cars consume 180, buses 3000, trucks 800, and other vehicles 50 Nm³ per month. There is, of course, a huge difference between different truck types. A 44 ton truck may consume up to 8000 (not 800) Nm³ per month.

Worldwide NGV statistics

Country	Natural Gas Vehicles					Refuelling stations				Monthly gas consumption (M Nm ³)		Last update	
	Total	Cars/LDV's	MD/HD buses	MD/HD trucks	Others	Total	Public	Private	Planned	Average consumption (actual report)	The consumption in theory		
Africa	203.172	200.979	1.597	287	359	188	181	7	6	47	41		
Egypt	198.852	197.206	1.299		347	172	168			46.85	39.41	December 2013	
Nigeria	3.287	3.000		287							0.77	August 2013	
Mozambique	441	500	150		11	2		2	2	0.24	0.54	July 2012	
South Africa	158	21	136		1	2	2				0.41	October 2013	
Algeria	125	115	10		3	3					0.05	December 2011	
Tanzania	55	55	2		1	1			2		0.01	August 2013	
Tunisia	34	32			1	1		1			0.01	December 2007	
Asia	3,500,000	3,493,948	6,036	16	2,074	2,039	35		400	480.00	647.03	September 2013	
Iran	3,000,000	2,070,000	760,000	120,000	50,000	5,730	5,330	200		2,751.10		June 2013	
China	2,790,000	2,609,500	500		180,000	2,997	2,997			245.75	480.21	March 2013	
Pakistan	1,800,000	500,000	300,000	200,000	800,000	903	903			163.21	1,190.00	November 2013	
India	450,000	450,000				213	213				81.00	June 2013	
Thailand	441.182	374.725	12.956	51.742	1.759	491	465	26		285.17	148.03	January 2014	
Bangladesh	220.000	145.304	10.000	27.000	37.696	585	585			91.55	79.64	April 2013	
Myanmar	28.479	25.000	3.475	4		51	51				14.93	December 2013	
Malaysia	55.999	55.345	594		60	184	182	2		14.80	11.75	October 2013	
Japan	425.950	16.564	1.560	22.514	1.950	314	274	40			25.77	March 2013	
South Korea	39.011	7.634	30.148	1.226	3	191	100	91	3	93.00	92.80	January 2012	
Tajikistan	10.600	10.600				53	53			4.13	1.91	November 2007	
Indonesia	5.690	4.850	570	20	250	11	11		4		2.61	December 2013	
Kyrgyzstan	6.000	6.000				6	6				1.08	December 2007	
Singapore	4.638	4.618	20			2	2	1		0.63	0.89124	October 2013	
Australia	3.110	25	2,060	275	750	52	5	47	10	5.99		June 2013	
United Arab Emirates	2.801	2.800				19	18	1	5		0.51	November 2013	
Afghanistan	1.701	300	1		1.400	2	2					August 2013	
Vietnam	462	400	50	12		7	7					July 2012	
New Zealand	201	61	19	84	37	14	14				0.26	December 2010	
Qatar	76	1	75			1	1	14				0.23	September 2013
Philippines	20	20				1	1	1			0.06	November 2013	
Kazakhstan	20	20				1	1					November 2013	
Turkmenistan						1	1		90			November 2009	
Europe	12,402,580	9,773,613	1,128,147	422,895	1,073,905	13,904	13,45	459	562	1,379	5,536		
Armenia	244,000	192,000	17,300	34,700		945	9	336		26.52	114.22	September 2011	
Russia	90,000	58,990	12,900	18,600		50	252	212	40	15	33.75	July 2013	
Georgia	80,600	51,000	6,000	5,000		18,600	100	100	25		32.11	November 2013	
Turkey	3,850	1,850	2,000			14	8	6		4.20	6.33	December 2011	
Moldova	2,200	2,200				24	24			0.40		September 2011	
Eurasia	420.650	306.040	38.200	57.760	18.650	735	353	382	40	65	217		
Italy	823,000	820,000	2,000	1,000		1,022	967	55		75.00	154.40	July 2013	
Ukraine	388,000	19,400	232,788	135,793		19	324	132	192	52.00	810.49	May 2012	
Germany	96,349	94,707	1496	90		56	914	71	86	23.00	21.61	April 2013	
Bulgaria	61,823	61,500	105	11		7	106	105	1	7	115.00	July 2013	
Slovenia	44,222	41,822	1,85	648	3	203	146	57	3	11.70	13.60	December 2012	
France	13,538	10,000	2,493	1,045		344	35	309	3	6.00	10.12	June 2013	
Switzerland	11,058	10,698	185	115		60	167	134	33	3	1.61	2.58	June 2013
Austria	7,717	7,500	167	48		2	205	175	30	13.50	1.89	June 2013	
Czech Republic	6,300	5,747	404	59		90	77	50	27	45	1.83	2.30	December 2013
Netherlands	6,480	5,650	686	341		3	194	124	70	60	3.25		June 2013
Belarus	4,600	4,600				42	42				1.03	0.83	September 2011
Hungary	4,062	4,000	50	10		2	18	3	15	9	0.22	0.88	June 2013
Spain	3,781	859	1,547	1,238		137	78	30	48	17	94.06	5.79	June 2013
Poland	3,392	3,000	320	30		42	47	33	14		0.76	1.53	June 2013
Finland	1,302	1,188	75	15		24	19	18	1	4	0.42	0.45	May 2013
Slovakia	1,284	900	334	50		14	10	4			1.00	1.20	June 2013
Iceland	916	900	2	14		2	2		2		0.17	0.18	November 2012
Norway	908	353	514	9		32	26	22	4	7	16.40	1.61	June 2012
Serbia	838	788	50	0		0	9	7	2	3	0.31	0.29	October 2012
Greece	708	6	600	102		0	6	4	12		1.33	1.88	July 2013
Portugal	586	46	354	86		100	5	1	4	1	1.16	1.14	December 2011
United Kingdom	559	20	3	496		40	22	5	17	5	3.00	0.41	December 2011
Belgium	499	472	3	11		13	16	12	4	22	0.16		March 2013
Luxembourg	261	221	39	1		1	6	1	2		0.10	0.10	July 2013
Estonia	194	18	170	6		4	2	2		1	0.02	0.09	May 2013
Lithuania	200	75	125			4	4	4		3	0.20	0.29	December 2012
Croatia	155	66	71	18		2	2	2		1	0.08	0.24	May 2013
Liechtenstein	143	64	61	18		2	1	1	1	1	0.10	0.21	December 2011
Macedonia	54	7	47			1	1		3		0.02	0.10	January 2011
Slovenia	48	23	20	5		6	1	5	1	1	0.062	0.07	June 2013
Bosnia & Herzegovina	21	20				2	2					0.01	May 2013
Latvia	18	18				1	1				0.003	0.00	September 2011
Denmark	15	15				2	2			3			July 2012
Ireland	1	1				1	1				0.00		June 2012
Montenegro								1			0.00		March 2006
Europe	1,483.132	1,094.834	246.409	141.259	630	3,891	2,918	973	302	320	1,949		
Argentina	2,331.912	2,331.912				1,932	1,932			239.20	419.74	October 2013	
Brazil	1,764.137	1,764.137				1,805	1,805			154.90	317.54	October 2013	
Colombia	463.930	434.201	20.069	9.660		703	703			45.00	146.09	September 2013	
Peru	273.242	273.242				178	178			26.28	49.20	August 2013	
Venezuela	189.054	189.045	11			226	226			18.54	30.46	November 2013	
Dominican Republic	105.890	105.890				166	166		300	8.15	19.06	March 2011	
Chile	10.909	10.909				15	15	15	100	0.09	1.96	June 2013	
Trinidad & Tobago	8.164	8.055	109			15	15		28	3.20	1.78	December 2011	
Ecuador	3.500	3.500				6	6			1.80		March 2012	
Panama	40	40				1	1				0.61	May 2009	
Panama	15	15									0.03	November 2008	
South America	5,130.895	5,101.046	20.189	9.660	0	5,047	5,047	0	428	497	986		
USA	250,000	231,400	14,600	4,000		1,438	535	903		77.52	88.65	March 2013	
Canada	14,205	11,800	199	6	2,200	83	80	3			2.84	December 2011	
Mexico	2,640	2,640				8	8				0.56	8	May 2012
Central & North America	266.805	245.769	14,830	4,006	2,200	1,529	623	906	0	1.37	92.97		
Worldwide	19,907,234	14,736,251	1,449,372	635,867	1,095,744	25,294	22,567	2,727	1,338	2,367	7,922	February 2014	



A multimedia portal in the service of the industry. NGV Journal, the first worldwide NGV newspaper.

Un portal multimedia al servicio de la industria. NGV Journal, el primer diario mundial del GNV.



This online newspaper exclusively covers the NGV market in the United States and Canada. It is one of the most active ones, whose share in the NGV sector grows exponentially every year.

Este periódico en línea cubre exclusivamente el mercado del GNV en los Estados Unidos y Canadá. Es uno de los más activos, cuya participación en el sector de GNV crece exponencialmente cada año.

:: MAGAZINES

NGV Africa

The most audacious project of NGV Communications Group has arrived in the African continent where NGV finds an immediate option for development in nearly ten national markets.

Asian NGV Communications

This is a magazine specially conceived to broadcast NGV activity in one of the most active regions of the world: Asia-Pacific.

NGVJournal.us magazine

The latest and most important facts of the US & Canada NGV market.

The Gas Vehicles Report

It has been monthly issued since January 2002 and its objectives are clearly defined by its slogan "a voice from Europe to the world, in the service of ecology and economy".

Prensa Vehicular Perú

Pioneer magazine pioneer on this fuel in the country and undisputed leader.

Prensa Vehicular

Since 1988, it has published more than 280 issues. This magazine is a pioneer and dean of CNG worldwide, with 24 years of a non-stop activity.

GNV Latinoamérica

This publication offers the chance to enter one of the largest and most active regions of the world for the NGV industry.

:: REVISTAS

NGV Africa

El proyecto más audaz de NGV Communications Group en el continente africano, donde el GNV encuentra una opción inmediata para el desarrollo en al menos 10 mercados nacionales.

Asian NGV Communications

Esta revista fue pensada para difundir la actividad del GNV en una de las regiones más activas del mundo: Asia-Pacífico.

NGVJournal.us magazine

Lo último y lo más importante sobre el mercado de Estados Unidos y Canadá.

The Gas Vehicles Report

Sale en forma mensual desde 2002 y su objetivo está claramente definido por su slogan: "una voz desde Europa para el mundo, al servicio de la ecología y la economía".

Prensa Vehicular Perú

Revista pionera sobre este combustible en el país y líder indiscutida.

Prensa Vehicular

Desde 1988, lleva publicada más de 280 ediciones en forma ininterrumpida. Es la revista pionera y decana del GNV en el mundo, con un récord de 24 años de permanencia.

GNV Latinoamérica

Esta publicación ofrece le posibilidad de penetrar en una de las regiones más amplias y activas del mundo para la industria del GNV.






NGV2014 South Africa


17-20
NOVEMBER
Sandton
Convention
Center



**NGV, the African continent's
driving force behind the adoption
of a clean and affordable mobility**

info@ngv2014southafrica.com
www.ngv2014southafrica.com

 info@ngv2014southafrica.com

 +39-335-189-3249
+54-11-4300-6137
+54-11-4307-4559

Hosted by



Endorsed by



Sponsor Silver



Organized by

