



ECOPETROL

MORE CLEAN BARRELS



MORE CLEAN BARRELS

The face of the O&G industry is changing fast, and nowhere more so than in Colombia which is blessed with large resources both conventional and unconventional

WRITTEN BY: **JOHN O'HANLON**
RESEARCH BY: **DAVID BROGAN**



The growth of Colombia’s oil and gas industries is attention-grabbing by any standards. As recently as 2007 the country was producing around 500 million

barrels of oil equivalent per day (boed) the first half of last year that figure topped a billion. Though there is an increasing number of outside players involved, the lion’s share of this production boom has been achieved by the largely government-owned petroleum business Ecopetrol, today one of the 25 largest petroleum companies in the world.

Ecopetrol’s figures closely mirror national production, rising from nearly 400 mboed to around 800 in the period from January to September 2013. “We have invested heavily in our legacy fields,” Ecopetrol’s E&P Development VP Rafael Guzmán told us, “and we have also developed new fields. Our plan for the future is to continue that production

growth. We have set two targets, one is to reach one billion barrels of oil equivalent per day in 2015 and 1.3 billion in 2020.”

We’ll look in a moment at how this will be achieved, but first of all he stresses that this is no mad race to find and exploit the country’s reserves. These are to be ‘clean barrels’. It’s a key objective of Ecopetrol to develop this concept – barrels that have been produced without accident, injury, harm to the environment or the community and with the goodwill of all stakeholders. It’s a new concept in the industry; an ambitious one

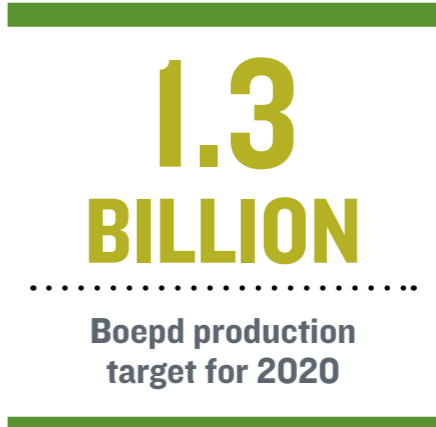
in which Ecopetrol wants to lead the world. But it doesn’t lose touch with reality: to be ‘clean’, the oil has to be viable. “Our aim is to have a 17 percent return on capital employed,” says Guzmán.

And Ecopetrol is investing heavily, with \$75 billion to be committed in the period 2013 to 2020. 90 percent of this money will be spent in Colombia itself, with the remainder being spent on exploration and production in three external territories, the USA’s Gulf of Mexico waters, Brazil and Peru – reflecting a new policy of expansion overseas where appropriate.

Increased production will come from three main sources. The first of these will be the existing fields, where there is a lot of scope to increase recovery. “In one way it is a blessing that we have seen a relatively low rate of recovery in many of these fields to date, because it presents us with

a big growth factor!” This is low hanging fruit for Ecopetrol since the reserves in the Llanos fields of the Meta department, as well as the Mid-Magdalena Valley further north and Catatumbo near the Venezuelan border are all amenable to well understood modern techniques of recovery optimisation and enhancement including infill drilling, water and steam injection and other thermal recovery technologies.

By revisiting its existing resources Ecopetrol has been able to revise its oil and gas in place estimates upward by more than



SPIECAPAG

SPIECAPAG - ISMOCOL



**20 YEARS TOGETHER BUILDING
INFRASTRUCTURE FOR OIL IN COLOMBIA**



ODL OIL PIPELINE



MARIQUITA - CALÍ GAS PIPELINE

www.spiecapag.com | www.ismocol.com





**BUILDING CONFIDENCE AND SECURITY
IN ALL OUR AIR OPERATIONS**



Helistar S.A.S. assigns aircraft according to the characteristics and requirements that the customer needs. Our principal operations are:

- ★ Seismography
- ★ Off-Shore Operations
- ★ Support in the construction of pipelines
- ★ Bambi Bucket operations for fire extinguishing
- ★ Support in the installation of communication equipment
- ★ Transportation of VIPs
- ★ Medical evacuation flights
- ★ Logistic support to pipeline security
- ★ IFR flights between authorized airports
- ★ Cargo transportation with long or short sling

Contact us: <http://helistaraviacion.com>



BE Seen



Contact us today and put your company in the spotlight!

vincent@bus-ex.com

15 billion barrels of oil equivalent and at the same time increase the expected life of these reserves by as much as 40 percent. And much of this growth comes in the form of heavy oil, for which demand is growing in the region.

The same parts of Colombia are proving ideal for further exploration. Because the geology is well understood, the likelihood of making further discoveries is high, and some success has already been achieved according to Rafael Guzmán. “We made an announcement last year of four discoveries and in the same heavy oil producing region, with a

similar type of oil.” Towards the end of 2013 Ecopetrol confirmed that two of these discoveries, at Cano Sur Este and Acacias in Meta province were commercially viable. The find is significant for the company;

the first time for a decade it has declared commercially viable an oil which it plans to operate.

Ecopetrol expects Cano Sur Este to produce 25,000 bpd by 2016, and that it will invest \$656 million in the block and drill 135 wells there. Both discoveries are close to roads, pipelines and surface facilities like treatment plants, he adds.

\$656
MILLION

Investment at
Cano Sur Este

“IN ONE WAY THE RELATIVELY LOW RATE OF RECOVERY IN MANY OF OUR FIELDS TO DATE PRESENTS US WITH A BIG GROWTH FACTOR!”



“For example the Acacias discovery is already producing, because it is close to the Chichimene field that we operate, and the Cano Sur field is close to a field in which we have an interest although we are not the operator. It is straightforward to start production from those fields.” The same thing applies in the Middle Magdalena Valley, he says.

At the same time as maximising the areas it knows, Ecopetrol is looking at parts of Colombia that have high potential but have been neglected so far. One of these is Caguan-Putumayo

close to the border with Ecuador. “Most of Ecuador’s oil comes from fields close to the Colombian border,” Guzmán explains. “Caguan-Putumayo lies between there and the heavy oil producing fields that we have in Colombia and we need to explore what is between. We have high expectations and so far we have gathered some geophysical data and drilled some wells though there is still a lot to learn about it.”

This activity comes under what he calls ‘frontier’ exploration. Higher risk but promising ever higher rewards. Under this heading are included the offshore projects the company is contemplating along its Caribbean coast. “We have had a field producing gas there for more than 30 years in partnership with Chevron, but we believe



that the potential is a lot higher.” Ecopetrol has blocks that it owns and others where it partners with successful offshore exploration companies like Petrobras, Repsol and Anadarko. “We will start drilling exploration wells offshore this year”

Gas could be a very important part of Ecopetrol’s portfolio going forward. However with a growing domestic market for gas the company will have to address the challenge to monetise future production, he admits. It is all part of Ecopetrol’s ‘blue sky’ exploration which now extends well beyond Colombia to Peru, the USA and northern Brazil, where it has acquired blocks both offshore and onshore in the Campos and Santos basins.

The final, and in some ways the most exciting, building block of Ecopetrol’s growth



“WE HAVE HAD A FIELD PRODUCING GAS FOR MORE THAN 30 YEARS IN PARTNERSHIP WITH CHEVRON, BUT WE BELIEVE THAT THE POTENTIAL IS A LOT HIGHER”

strategy is unconventional hydrocarbons. Once again the company is focusing on the areas it knows best and where infrastructure is already in place. Colombia’s potential for shale oil and gas is attracting players from all over the world. It’s no secret that shale gas has transformed the USA’s energy landscape: there are similarities and differences. “Basically, the area we have

to work with is a lot smaller than in the States, but the reservoirs we are working with are much thicker. What we lack in area we make up in thickness!” Ecopetrol will go into partnership with experienced players from abroad, but it will also develop its own resources and has already drilled four exploration wells in the Middle Magdalena Valley and is actively working in greenfield

sites in Cordillera, Catatumbo and the Upper Magdalena Valley. More wells will be sunk this year, he promises.

Ecopetrol developed its clean barrels policy in response to the national environmental monitoring agency Autoridad Nacional de Licencias Ambientales (ANLA) which imposes very strict standards on the industry. Bring it on says Rafael Guzmán! “Last year Ecopetrol was ratified for the third successive year by the Dow Jones Sustainability Index. We are every bit as proud of that as we are of our production growth, and we don’t want to grow production at the cost of society or the environment!”

The same standards apply to Ecopetrol’s subsidiary Cenit, spun out just last year with the task of providing a national

hydrocarbon distribution infrastructure for Colombia, available to all players. We have spoken mainly about upstream activities, but Ecopetrol is very much involved in developing the downstream market. It is investing in its Cartagena refinery and elsewhere to make them more adaptable in present day conditions. “These refineries were made for light oil which is what we used to produce most, but now we have are producing much more heavy oil the refineries need to adapt.” **BE**

For more information about Ecopetrol visit: www.ecopetrol.com.co



ECOPETROL

www.ecopetrol.com.co

Produced by:

ACHIEVING BUSINESS EXCELLENCE ONLINE

BE Business Excellence

www.bus-ex.com