

# AZERBAIJAN



## On track for success

"The deal of the century" was signed in 1994 between the Azerbaijani government and an oil consortium headed by BP to develop Azerbaijan's hydrocarbon resources. With the BP-operated Baku-Tbilisi-Ceyhan pipeline under construction in readiness to take the oil from the landlocked Caspian to international markets, **Lisa Andrews** travels to Baku to find out what progress has been made over the last ten years. Photography by **Ben Gibson**

## Azerbaijan

**A**zerbaijan is a country used to journeys. As a strategic crossroads between East and West, travellers along the legendary Silk Road would have been a familiar sight. Some stayed longer. Its capital Baku has moved through control by Persia, the Mongols and Russia, while the arrival of the Russian Bolshevik Army in the early 20th Century marked the beginning of 70 years of Soviet rule. Today as an independent state it is embarking on a new leg of its journey, this time a commercial one with the international hydrocarbon industry.

Like its journeys, Azerbaijan's oil and gas associations stretch back to ancient times when Zoroastrians – for whom fire was an important symbol – built temples around burning gas vents in the ground. By the 15th Century oil lamps were supplied by surface wells and commercial exploitation began in 1872. At the beginning of the 20th Century the country was supplying half the world's oil needs.

BP's part in the latest stage of the oil journey is both physical and metaphorical. As the head of a consortium of oil companies investing \$18 billion, it is helping revitalise an industry that is expected to create state



**On the boil:** Azerbaijan is famed for its natural gas resources, used here to brew tea at a café in the countryside.

revenues equivalent to the country's current gross national product within five years. To do this means developing the 5.4 billion barrel Azeri-Chirag-Gunashli oil field and constructing a 1,760-kilometre (1,093-mile) pipeline that will travel 443 kilometres (275 miles) through Azerbaijan before weaving its way through Georgia and down to Ceyhan on the Turkish Mediterranean coast.

It all stems from a production sharing agreement (PSA) signed between the oil consortium and the government of Azerbaijan in 1994. Dubbed 'the Contract of the Century' by the late President Heydar Aliyev, it made Azerbaijan the first former Soviet Union state to sign a PSA with foreign oil companies. What made it even more unique was that it was to develop a proven hydrocarbon resource. "There aren't

many known 5 billion barrel fields sitting in relatively benign circumstances where a contract had been concluded to come in and develop it," says David Woodward, President of BP Azerbaijan.

Undoubtedly the contract was also a way of cementing Azerbaijan's independence. Under Soviet rule, the country had seen little economic investment and notched up a catalogue of environmental scars.



"There are a lot of capable people here and their knowledge of the geology and implications on our developments is of particular value to us."

**David Woodward**

This contract is helping place Azerbaijan as a global supplier of energy. "I hope that people around Azerbaijan see this as their project. We are here to help develop the people and the resources in support of the vision set out in the Contract of the Century." says Neil McCleary, vice president Operations.

Today, the Chirag portion of the ACG field produces about 145,000 barrels of oil per day (bpd), with development of what is known as Phase 1 of the 'full field development' well on the way to first oil in the Azeri section. Oil is due to flow from the Central Azeri platform in 2005, raising production to over 300,000 bpd in total across ACG by the end of 2005. Phase 2 will see completion of the East and West Azeri platforms in time for first oil in 2006, while Phase 3 – officially sanctioned by BP in September of this year – will bring Deepwater Gunashli onstream in 2008. From there total production is expected to plateau at around 1 million bpd.

The technical challenges of achieving this are formidable. Drilling in the Caspian is some of the most difficult in the world as the reservoir rocks are very young. This can cause all manner of hazards, including mud volcanoes which can penetrate through reservoirs and affect productivity. ☺



The BTC pipeline will take oil from the landlocked Caspian to international markets.



Platform for growth: Azerbaijan's hopes for future economic growth rests in large part with successful development of its vast oil and gas resources.



Back onshore, the challenges don't end. As a landlocked country, getting equipment into Azerbaijan is just as hard as getting oil and gas back out. "If you want a big rig, then it has to be one you can construct in situ," says Woodward. This has required major investment in a number of construction yards around Baku.

Despite all this, progress is made every day and ACG Phase 1 completion will coincide with that of the Baku-Tbilisi-Ceyhan (BTC) pipeline, which will carry oil to a new Mediterranean Sea loading terminal located near Ceyhan, Turkey, and ultimately to international markets. At present, more than 80% of the Azerbaijan section of the pipeline is complete. Under normal circumstances 443 kilometres would not be an excessively onerous length for a new-built pipeline but with poor transportation and support

**Old horizons:  
Under Soviet  
rule, Azerbaijan  
saw little  
economic  
investment.**

infrastructure this particular endeavour has taken longer than usual. Unsurprisingly, road traffic safety is a significant part of the challenge, so BP has implemented strict driving standards. It's also gone one better and physically taken some of its people off the road and onto the rail track.

Train travel is something of a tradition in Azerbaijan. Much of the country's oil was once transported this way and for many people it is a cheaper, safer option than travelling by vehicle. With a regularly scheduled rail service running from Baku to Ganja – Azerbaijan's second largest city – the train happens to follow much of the BTC route. Looking from the fully refurbished, BTC-branded carriage you can just make out the newly-turned soil that now covers the buried pipeline.

BTC workers first began using dedicated passenger services on the rail system in October 2003 thanks to

## Nurturing home grown talent

**A**lthough Azerbaijan can lay claim to one of the world's oldest oil industries, years of underinvestment has left a gap in both technical and human capability. This has not stopped BP working hard to fulfil nationalisation targets and is now the largest foreign employer of professional locals. "We have a real commitment to develop Azeris, both as part of the production sharing agreement and because it's the right thing to do," says David Nolan, asset manager for the Azeri portion of the ACG field.

The current recruitment focus is on technicians and college graduates, who Nolan describes as "the stars of the future". As a consequence BP's

Azerbaijan business unit is the largest employer of Challenge graduates – a three-year internal programme designed for recent graduates to move around the organization and develop a host of business skills.

But it is the \$12 million training facility at the Sangachal oil and gas terminal that is the talk of the town. Developed in conjunction with KCA Deutag – the drilling contractor working on ACG – the centre comprises 24 classrooms, four information technology suites, several workshops, drilling simulator, fluid separation process – similar to the actual facilities on the platforms and full emergency response facilities in which instructors can replicate challenging scenarios.

The fluid separation process and the drilling simulator are state-of-the-art teaching tools. Designed to train operators to drill remotely, the simulator features two drilling chairs equipped with a joystick and placed in front of a cinema-style screen. "Basically we need people who know how to drill but who also know how to drive a Nintendo computer game," says Nolan.

It's a significant investment for Azerbaijan, says Steve Prior, from the training centre. "There's nothing like this anywhere else in the country. Technology was developed during the Soviet era but there was never any real reinvestment. Now we may well be better kitted out than some assets around the world."



a relationship with Azeri Rail that began with shipping BTC pipe. A newly-refurbished, BTC-branded carriage was officially put into service in February 2004. “We actually laid the carriage out the way we wanted it,” says Wayne Wheeler, Azerbaijan BTC project manager. “For example, we put in video systems which save time at site by taking employees through field safety inductions en route.”

Operating six days per week, it’s estimated that the train has mitigated the need to purchase and operate some 30 additional project vehicles – a saving of \$1.5 million – and eliminated more than 1 million kilometres (621,371 miles) of road journeys every year. And with average travelling times of up to six hours, it is easy to see why the train has become a dependable option for BTC.

The BTC carriage has also had a knock-on effect on the local community. “We asked Azeri Rail to

**Moving story:**  
Train travel is a traditional mode of transport in Azerbaijan.

**Virtual reality:**  
State-of-the-art drilling simulators, below left, and training fireman at Sangachal terminal.

open up several rail stations close to our construction camps that had been closed for up to 25 years,” says Wheeler. Consequently, local community members have again acquired a more convenient access to the national rail system.

Azerbaijan’s journey to renewed oil wealth is already starting to have a positive impact. “In five years, I think we’ve seen significant progress in starting to rebuild the country,” says Woodward. Poverty and unemployment remains rife and working with government bodies still involves an enormous amount of bureaucracy, but there are grounds for optimism. President Ilham Aliyev is pushing for government reforms and seems determined to develop a market economy, reduce corruption and improve the tax and legal systems. “It is too easy to someone from a western background to criticise and ☺



## Azerbaijan

expect change overnight,” says Woodward. “Things are moving, though, there’s a state oil fund and Azerbaijan is the first country to sign up to the extractive industry transparency initiative, spearheaded by British Prime Minister Tony Blair.”

Western criticism is something the BTC project has become used to, with intense scrutiny from non-governmental organizations (NGO). “It’s been interesting, perhaps more so than we’ve wanted at times,” Woodward says, “but we’ve found a large group of the NGOs want to engage with us on this.” Consequently, the project has been modified over time, through changes in routing to the timing of construction activities to avoid interference with animal breeding.

The involvement of the European Bank of Reconstruction and Development and World Bank has also been influential: from their requirements that the ACG and BTC projects publicly disclose a wealth of information during an extensive public consultation exercise, through to independent reporting of compliance against environmental and social commitments, as well as making an important contribution to the collective effort to ensure that the benefits flowing from these projects are sustainable and enjoyed by all.

In the meantime, both the ACG and BTC projects have enjoyed widespread support within Azerbaijan. During last year’s elections the project was one of the few issues to unite opposing parties.

Support of this kind is can only come through constant engagement with a variety of stakeholders and in BTC’s case this included more than 4,000 Azeri landowners. “One of the keystones of our long-term security plan has been to involve the community in everything we do from the beginning,” says Wheeler.

Like all of Azerbaijan’s journeys, the expectations from this opportunity will take time to fulfil, but everyone agrees the potential prize for industry, government and the people is huge. “We know these projects are important to BP, and we all understand and respect that these are country-making opportunities for Azerbaijan,” says McCleary.

**On schedule:  
Azerbaijan’s  
journey to  
renewed oil  
wealth is having  
a positive impact.**



## Shah Deniz

# Turning up the gas

Developing the world’s largest gas find in a decade is a challenge the team is confident of reaching

It’s not just oil Azerbaijan is big in. In 1999, BP discovered the more than 22 trillion cubic foot Shah Deniz gas field. Sanctioned in 2003, the field expects to reach first gas by October 2006. It’s a rapid pace for the world’s largest gas find in a decade, but one the team is confident of reaching. “It’s a tough schedule to deliver and we’ll have to push hard to keep the schedule on track but we’ll get there,” says Rob Kelly performance unit leader for Shah Deniz.

Like the ACG oil development, getting gas to market is one of the biggest challenges. Stage one will involve developing a third of the field. About 75% of that will end up in the Turkish market, with 15% going to Azerbaijan itself and 10% to Georgia. A small amount will be sold to the BTC pipeline to power its pump stations.

To end up in Turkey will require a second 42-inch diameter pipeline, running parallel to the BTC line through Azerbaijan and Georgia. Construction on



On the ground: A pipeline engineer and environmental specialist discuss ground reinstatement on the BTC pipeline right of way, left, and float-out of the central Azeri platform, right.



this South Caucasus Pipeline (SCP) began in September with the same team that managed and constructed the BTC pipeline. “The beauty of building SCP immediately after BTC is that we’ve got our contractors, processes, systems and procedures already in place. When we go into a given area we already know who to talk to and understand what their problems are from a technical as well as environmental and social standpoint,” says Wayne Wheeler, Azerbaijan BTC/SCP project manager.

It also means lessons learned during BTC construction can be applied on SCP. “There are some areas that have tripped us up this year on BTC construction because we didn’t appreciate how wet it would be during certain periods of the year, so we now have the opportunity to learn from these experiences and come back to construct SCP during the appropriate time of year. In addition, we performed

“The beauty of building SCP immediately after BTC is that we’ve got our contractors, processes, systems and procedures already in place.”

**Wayne Wheeler**

dual-lay of both BTC and SCP pipe at a number of difficult locations and crossing during the construction of BTC. This allows us to have that work already behind us during the SCP construction activity,” says Wheeler.

The parallels between ACG and Shah Deniz stretch into technology as well. Both present difficult drilling conditions, although in Shah Deniz’s case this is compounded by well depths of 6,500 metres (21,325 feet). Construction-wise Shah Deniz has had to look outside Azerbaijan to build the majority of the platform. With topsides built in Singapore and the drilling rig constructed in Norway, transportation is something of a challenge. “Because Azerbaijan is landlocked the only way to ship anything in is through the canal system and you can only do that during six months of the year, before they freeze up,” says Kelly.

Both ACG and Shah Deniz share wide external expectation. “Following the contract of the century Azerbaijan entered into a series of production sharing agreements but suffered a string of drilling disappointments,” says David Woodward, BP Azerbaijan president. “Then in 1999 came the Shah Deniz success and it was hugely significant for the country. This was something they could really claim credit for independently of their Soviet past and was, in a way, an endorsement of the oil policy they had begun pursuing.” **BPM**