

## REPUBLIC OF IRELAND

*By N.B. Dhonau*

*Exploration and Mining Division, Department of Communications, Marine and Natural Resources*

The global economic slowdown, combined with the shock of September 11 had its inevitable effect on the Irish economy. Nonetheless, it remained relatively strong, with preliminary figures for GNP showing that it grew by 5% in real terms to €96.8 billion. Growth slowed significantly during the latter part of the year, but most economic commentators predict improvement during 2002. However, inflation (3.8%) continues to be a concern, especially as domestic wage pressures are increasing. Interest rates were 3.4% at year-end, as determined by the European Central Bank. Corporation tax for mining remained at 25%, but with additional allowances compared with most other industry. This position remains under review.

The total value of production for mining and quarrying in 2000 (the latest year for which figures are available) was €626.6 million of which €161.6 million was contributed by metal mining. About 1,100 people are employed in mining and 3,000 in the non-energy extractive industry as a whole.

There are 12 State Mining Leases and four Mining Licenses, and €1.347 million was collected in royalties and licence fees. Work continued on the preparation of plans to remediate the effects of historic mining in the Silvermines area in County Tipperary.

### **Exploration**

Exploration in Ireland continued at reduced levels compared with previous years. This was partially a result of the withdrawal of Pasminco and the takeover of Rio Algom by Billiton and the subsequent merger of Billiton with BHP, but was compounded by the outbreak of Foot and Mouth disease in the UK. As a result of the need to avoid any possibility of the introduction of this highly contagious animal disease into Ireland,

access to land was greatly restricted during the first half of the year but by late summer normal exploration activity had resumed.

The number of Prospecting Licences fell to 397, covering 13,200 km<sup>2</sup> at the end of the year. Direct expenditure fell by 8% in 2000 to €8.5 million, and the figure for 2001 is expected to show a further decline. As an aid to exploration, the Department of the Marine and Natural Resources is progressively making available high-resolution aeromagnetic data flown by the exploration companies over 30% of Ireland.

There is substantial involvement by major international companies including, Anglo American (as Amcorp Ireland Ltd), BHP Billiton, Grupo Mexico SA de C.V., Noranda and Outokumpu Zinc-Tara Mines. Other significant companies, in terms of licenses held, include Arcon, Conroy Diamonds and Gold, Ivernia West, Minco, Navan Resources, Ovoca Resources and Prospex.

The main focus for base metals exploration remains the Lower Carboniferous of the Midlands. The most encouraging results have been achieved in the Pallas Green, County Limerick prospect, which is held in a Noranda/Minco joint venture. Two small high-grade zinc lenses have been identified as a result of 11,000 m of diamond drilling in 48 holes. Other areas still holding promise include Rapla, 5 km east of Galmoy, held by Arcon, and Ballincolla, Co. Laois, along strike from Rapla, held by Ivernia West and Anglo American in joint venture.

Cambridge Mineral Resources continued its search for gemstones in Co. Donegal, in lithologies similar to those in gemstone areas in Australia and the Far East. Some gold exploration continued, and Conroy Diamonds and Gold plc reported that an EU-funded

project led by the British Geological Survey confirmed the widespread occurrence of gold mineralisation in the Lisglassan/Tullybuck area near Clontibret Co. Monaghan. Angus and Ross has reported the potential for tantalum mineralisation on the margin of the Leinster Granite in Counties Carlow and Wexford, following first-stage geochemical sampling

Irish companies continued to hold significant overseas interests, including Ennex (Kazakhstan), Glencar (Ghana), Ivernia West (Australia), Kenmare (Mozambique), Minmet (Brazil), and Navan Resources (Eastern Europe and Spain).

### Metals

The sustained decline in zinc prices throughout most of 2001 had serious effects on the three Irish metal mines.

Outokumpu Zinc-Tara Mines milled 1.97 Mt of diluted ore at an average grade of 8.0% Zn and 1.92% Pb at its mine at Navan, Co. Meath. This produced 263,000 t of zinc concentrate (55.4% Zn) and 44,000 t of lead concentrate (62.2% Pb). Total proven and probable reserves (December 31, 2001) were 12.6 Mt averaging 8.9% Zn and 2.07% Pb. There are additional resources totalling 17.2 Mt at 7.08% Zn and 2.27% Pb. Tara has applied for a new Mining Facility to the southwest of the existing mine where resources of more than 15 Mt at over 10% Zn plus Pb have been identified

As a result of the large losses being incurred, Tara was placed on care and maintenance in November, 2001. It now hoped that production will recommence in the latter half of 2002. No financial results are available since 1999, which were reported in last year's article. Outokumpu has announced its intention to withdraw from mining and is seeking partners for the Tara operation

The Receiver to Bula Ltd has signed a contract for the sale of its assets to Tara for €35 million. These include a portion of the Navan orebody estimated to contain about 10

Mt of ore averaging 10% Zn and 2% Pb. This sale will have to be approved by the Irish High Court and it hoped that this approval will be given during 2002. The incorporation of this ore into the Tara mine, together with the plans to develop the SWEX orebody to the southwest are essential to the company's plans to become a low-cost producer

Arcon Mines Ltd processed 548,000 t of ore averaging 10.27% Zn and 0.57% Pb at its mine at Galmoy, County Kilkenny. This yielded 90,000 t of zinc concentrates (52.7% Zn) and 563 t of lead concentrates (57.6% Pb). Total production amounts to 2.5 Mt of ore at 10.6% Zn and 0.69% Pb. Preliminary results for 2001 showed a net loss of €27.2 million. The parent company, Arcon International Resources plc, has been in discussions with its bankers with a view to varying the prepayment terms for its loans, and agreement has been reached on a financial restructuring, including a rights issue. Sir Anthony O'Reilly remains the major shareholder in the company with 44.1% of the shares and he will, with others, underwrite the rights issue. Progress was made on the Planning Application for permission to extend the underground workings to encompass an additional 2 Mt of resources and permission was granted in April 2002. Exploration in the immediate mine area is continuing.

The Lisheen mine reached its full capacity of 1.5 Mt/y in November, in spite of continuing to meet difficult ground conditions in some areas. High water inflows have been managed by the installation of additional water handling capacity bringing the total to 210 megalitres per day. Some 1.146 Mt of ore averaging 11.05% Zn and 2.08% Pb were milled. Lower than predicted mill recoveries have been addressed by the introduction of additional flotation capacity. Zinc concentrate production totalled 195,000 t (54.05% Zn). Lead concentrates amounted to 26,700 t (63.46% Pb). Ivernia West plc, which has a 50% interest in the project, has reported proven and probable ore reserves of 13.42 Mt at 11.60% Zn and 1.83% Pb as at December 31, 2001. It has also reported that the net

smelter revenue for the project amounted to US\$54.91 million, resulting in a loss before depreciation and amortisation of US\$9.03 million. Approximately US\$80 million was required to cover these losses, together with additional capital investment and debt service. This was provided by Anglo American, which holds the remaining 50% interest in Lisheen and is managing the project.

### Industrial Minerals

Aughinish Alumina, a wholly-owned subsidiary of Glencore, produced over 1.4 Mt of alumina, based on bauxite imported from Boke, Guinea. Irish Gypsum is understood to have mined approximately 500,000 t of gypsum at its open-pit mine at Knocknacran, Co. Monaghan. The gypsum is destined for its nearby plaster and plaster-board factory and for the Irish cement industry. The Minister for the Marine and Natural Resources, published notice of intention to issue a new State Mining Lease to Irish Gypsum which will help to ensure that gypsum production will continue once the Knocknacran quarry is worked out.

Construction activity in Ireland was flat after seven years of strong growth. The public, commercial and industrial sectors remained strong, but road projects were delayed by the Foot and Mouth outbreak in the UK. Cement Roadstone Holdings, Ireland's largest supplier to the construction industry, invested in increasing quarry output, and in efficiency improvements at its two cement plants, both of which achieved record production. Turnover from production in Ireland increased by 4.2% to €736.9 million and trading profits reached €156.3 million, a rise of 8.4%. This Irish-based multinational now operates in 22 countries worldwide and its turnover reached €10,443 million (+17%) of which 62% was generated in the Americas and 23% on mainland Europe. It achieved net profits of €582 million. The Group spent €1,100 million on acquisitions, including a 25% stake in the Mashav Group, Israel's only cement producer.

Lagan Cement, a part of Belfast-based Lagan Group, continued construction of its €50 million

cement plant at Killaskillen, County Meath. The plant, which will have the capacity of 600,000 t/y will produce ordinary Portland cement, and high -quality white cement mainly for export.

Premier Periclase (a part of CRH) has the capacity to produce about 90,000 t/y of sinter magnesia from sea water. It reported improved performance in an extremely competitive market.

### Coal and Hydrocarbons

There was no recorded coal production during 2000.

Enterprise Energy Ireland drilled its fifth appraisal well on the Corrib Gas Field in the Slyne Basin, in 338 m of water. Following a successful hydraulic fracturing job, well 18/25-3 flowed at a rate of 27.7 Mft<sup>3</sup>/d of gas through a 2 in. choke with strong evidence that further clean-up is likely. Two deviated pre-development appraisal wells were drilled by Marathon on the SW Kinsale Gas Field in the North Celtic Sea Basin in approximately 93 m of water. Well 48/25-4 flowed at a rate of 27 Mft<sup>3</sup>/d of gas through a 1.375 in. choke and well 48/25-5 flowed at a rate of 23.5 Mft<sup>3</sup>/d of gas through a 1.375 in. choke. Ramco drilled the gas appraisal well 48/24-5A on the Seven Heads Field in the North Celtic Sea Basin in approximately 100 m of water. On test, the well achieved a maximum flow rate of 14.2 Mft<sup>3</sup>/d of gas through a 1.44 in. choke.

Three exploration wells were drilled offshore Ireland in 2001. Enterprise Energy Ireland drilled well 5/22-1 in the Rockall Basin in 1,623 m of water, Statoil drilled well 35/21-1 in the Porcupine Basin in 660 m of water and EDC drilled well 63/4-2 in the Fastnet Basin in 133 m of water. All three wells were plugged and abandoned as dry holes.

Two exploration wells were drilled onshore by Evergreen Resources in the Northwest Carboniferous Basin; Dowra No. 2y in Co. Cavan and Thur Mountain No. 1 in Co. Leitrim. It is planned for both wells to be hydraulically fractured and tested in 2002.

A total of 2,444 km<sup>2</sup> of 3D seismic reflection data were acquired offshore in three surveys in the Slyne and Erris Basins.

A Petroleum Lease over the Corrib Gas Field was awarded to Enterprise Energy Ireland. Ramco converted its Licensing Option over Seven Heads into the Seven Heads Gas Lease Undertaking, and Providence Resources were awarded a Lease Undertaking over part of Block 50/11. Two Onshore Exploration Licences were awarded to Evergreen Resources. No offshore Exploration Licences were awarded but ten Frontier Exploration Licences and two Standard Exploration Licences were relinquished. One Licensing Option was awarded and this expired at the end of December 2001.

The total indigenous gas production was 36 Bft<sup>3</sup> (1.02 billion m<sup>3</sup>) from the Kinsale Head, Southwest Kinsale and Ballycotton Gas Fields.

At the end of 2001, the total number of Exploration Licences offshore Ireland stood at eight and there were seven current Licensing Options.

### Production Table

('000 t except where stated)

Commodity	1999	2000	2001
Lead (metal in concentrate)	39.2	57.5	44.5
Zinc (metal in concentrate)	200.2	263.0	298.1
Silver ('000 kg in lead conc.)	10.4	16.7	8.7
Gypsum <sup>e</sup>	500	500	500
Coal	0	0	0
Lead metal production	10.0	8.5	9.8
Alumina	1,300.0	1,300.0	1,400.0
Natural gas (billion m <sup>3</sup> )	1.40	1.23	1.02

<sup>e</sup> estimate