

# COVER STORY

## Iraq's Bekme dam — who dares, wins

THE barren mountains of Iraqi Kurdistan form the unlikely backdrop to one of the Middle East's last mega-projects — the \$1,600 million Bekme dam. Confidence in Iraq's ability to defend the area against further Iranian encroachments — it lies just 40 kilometres from the border, and the local population has a long tradition of armed resistance to Baghdad — has been expressed by a joint venture of Turkey's Enka Construction & Industry Company and Yugoslavia's Hidrogradnja, which has signed a seven-year contract to build the dam. In doing so, the venture has also shown faith in Iraq's ability to pay for the scheme, at a time when many foreign contractors are unwilling to bid for work because of the shortage of hard currency.

The Bekme order — contract 4A, worth ID 460.35 million (\$1,485 million) — is thought to be among the largest non-military civil works contracts ever placed in Iraq. It was signed with the Irrigation Ministry in Baghdad by Enka chairman Sarik Tara and his counterpart at Hidrogradnja, Veljko Rzehak, on 29 September. Work will start in two or three months.

Bekme lies deep in the mountains of the northeast. The site on the Greater Zab river, about 120 kilometres upstream of its confluence with the Tigris, is 400 kilometres due north of Baghdad, and about 110 kilometres east of Mosul.

The rockfill dam will be one of the world's largest — crest elevation has been fixed at 204 metres, length at 600 metres and storage capacity at 33,000 million cubic metres. Work calls for 11 million cubic

metres of open excavation, 2.5 million cubic metres of underground excavation, 3 million cubic metres of concrete and 25,000 tons of hydraulic steel structures.

Also included is a turnkey housing complex comprising 900 villas and social amenities. The complex, which is to house construction workers, will be used as a tourism complex when the dam's lake has filled.

Enka and Hidrogradnja have an equal share of responsibility for the project, under the former's leadership. The US' Bechtel is acting as management consultant to the group; subcontractors have yet to be appointed, Enka says.

### Determination

The decision to press ahead with the Bekme scheme — originally proposed in the early 1950s — is striking proof of the government's determination to continue the process of construction and development, despite the setbacks on the war front. It comes after enforced cutbacks in the development programme in 1982, and the shock of the oil price slump at the start of 1986.

Many observers find it inconceivable that Baghdad should choose to start such a large venture at a time when its cash reserves are perilously low — or that any international contractors should wish to commit themselves to seven years' work in a most inhospitable area of a country at war.

Enka has no such doubts, saying it is "very happy to get the order." The com-

pany, which has been working in Iraq for the past five years — sufficient time for it to weigh the risks involved — has "no reason to doubt the success of the project."

Enka began work in Iraq in 1981; a \$29 million civil works order for the Tasluja cement works was the first of \$150 million worth of orders the company has won. These include civil works contracts for the Kerbala cement works and the Shamiya tobacco factory. Enka worked with Japan's Toyo Engineering Company on the first expansion of the Iraq-Turkey pipeline, and has also won water supply and bridge orders. More recently, the company has been bidding keenly for water supply and sewerage schemes, and was low bidder for a series of interchanges at Basra.

### Competitiveness

Such competitiveness was evident during the early stages of the discussions for the Bekme scheme, when Enka was quick to refute reports from Brazil that a grouping of Construtora Mendes Junior and China Civil Engineering Construction Company — the low bidder, at ID 444 million (\$1,432 million) — would win the contract.

Enka and Hidrogradnja, which was reported to be the only group to include a bid bond with its offer, was obviously prepared to be flexible about its original bid of ID 515 million (\$1,661 million), and was soon seen to be the only venture in the running for the Bekme order (MEED 8:2:86; 15:6:85).

Sarajevo-based Hidrogradnja is one of the world's leading dam construction companies. It is currently working on the Qadi-

### The funding of a mega-project

IRAQ must find a total \$996.98 million to pay the foreign currency costs of the ID 460.35 million (\$1,485 million) Bekme dam contract. Of the total, more than \$670 million is in the form of promissory notes, on which payment will be deferred for three to seven years from date of issue.

The remaining portions, which total \$326.9 million, include a \$59.3 million advance payment, monthly progress payments of just above \$3 million and about \$13.9 million in acceptance payments.

The payment terms are:

- a 5 per cent advance payment, of which 80 per cent is in dollars and the remainder in dinars
- 90 per cent in monthly progress payments; the contract period is 84 months
- a 2½ per cent provisional acceptance payment
- a 2½ per cent final acceptance payment.

The terms for the monthly and acceptance payments are:

- 30 per cent in dinars
- 20 per cent in foreign currency
- 50 per cent in promissory notes.

Turkey's Supreme Planning Council has already said that the Central Bank of Turkey will accept promissory notes to the value of \$375 million on Enka's behalf. It is this central bank guarantee which negates any financial risk for the Turkish company, Enka's chairman Sarik Tara says. According to previous agreements along these lines, notes issued by Iraqi clients and guaranteed by the Central Bank of Iraq have been purchased from Turkish contractors by the Central Bank of Turkey and presented for repayment after two years.

Whether Enka will have to make full use of this facility remains to be decided. The final financial share between Enka and Hidrogradnja has yet to be agreed and is thought to depend more on the scope of supplies than the percentage of work involved. It is not clear how the Yugoslav company will finance its share, although it is understood that the bulk of a \$500 million credit offered by the Yugoslav government in May 1985 remains unused.

siya dam's hydropower station, according to a \$570 million turnkey contract awarded in 1981. Commissioning of the first turbines at the 600-MW plant is now under way (MEED 31:5:86).

There is no doubt that the bidding for the Bekme order would have been more competitive if Iraq had been at peace. Many international dam builders failed to place offers not because of the war, or the Kurds, but because "for a project of this size in Iraq today, it is almost impossible to get export credit insurance cover," as one European contractor commented. "Under normal circumstances, we would love to have it," he added.

At one point — early in the dam's history — it appeared that the Japanese were hoping to make the Bekme project their own. Japanese involvement began in early 1979, with the appointment of the Electric Power Development Company (EPDC) as design consultant. The \$7.2 million contract called for a 28-month design period, with an option for seven years' construction supervision. It was then envisaged that the dam would be completed in 1990, at an estimated cost of \$1,456 million-1,941 million.

### Wary

In 1980, Hazama-Gumi won a \$10 million order to carry out soil investigations, and it seemed clear that Tokyo hoped Japanese contractors would both build the dam, and supply mechanical and electrical equipment. However, the outbreak of war — which compounded Baghdad's financial problems — highlighted the considerable exposure of Japanese trading houses, and they adopted a wary approach when Baghdad sought expressions of interest in the project in late 1984.

A consortium led by Shimizu Construction Company did bid for the civils contract, but could only offer the highest price of ID 960 million (\$3,096 million). For the mechanical and electrical order, three trading houses — Marubeni Corporation, Mitsubishi Corporation and Mitsui & Company — representing the main Japanese turbine manufacturers formed a consortium to increase their competitiveness and limit the financial risk. Again, the group's bid was relatively high, at ID 95 million (\$306.3 million).

EPDC's continuing involvement in the project is unclear. Reports at the beginning of 1985 suggested it was trying to attract Japanese government assistance in financing the supervision order. For the Saddam (Mosul) barrage — the only other dam of comparable size being built in Iraq — the order was valued at \$50 million (MEED 8:2:85, page 13).

Bekme, which is clearly a priority project,

## Interview with Enka chairman Sarik Tara

*Why did you decide to take on the risks involved in such a large project?*

For a start, the importance of this project to Iraq enormously reduces the risks to us. Also, we are a firm that has been working in Iraq for a long time and so we know that the Iraqi government, despite all its difficulties, always carries out all its responsibilities in full. And when it does have difficulties in discharging its obligations, it always manages to resolve its problems with mutual discussion and without involving the contractor in a loss.

Iraq's bureaucracy is fully aware and internationally experienced. Because of this, we do not see any more risk in this project than there is in any project which is very important and large for its contractor. Our partner, Hidrogradnja, has constructed more than 40 dams and has finished three in Iraq. Also, Bechtel will be handling the project management.

Half the project will be financed by Turkey and Yugoslavia, and this in practice will mean that, as a contractor, we will not be affected by payments difficulties. And furthermore, Enka has been working in northern Iraq for the past seven years without any problems.

*Why did you reduce the size of your bid from ID 515 million?*

Our first bid of ID 515 million was the second-cheapest bid. As a result of various changes and bits of bargaining, we have

arrived at today's price. Our consortium is happy about the price.

*Will the \$366 million remainder of the promissory notes be taken by Yugoslavians?*

Ours is a 50:50 consortium and so the Yugoslav Bank for International Economic Co-operation and Privredna Banka Sarajevo will give Hidrogradnja the funds for the promissory notes belonging to the Yugoslavians.

*Over what period will the promissory notes be deferred?*

The repayment of the promissory notes starts at six-month intervals 34 months after the commencement of work. Interest of 1 per cent will be paid every six months.

*What percentage of monthly payments will be in promissory notes and what in cash?*

Fifty per cent of the work will be paid as promissory notes and 50 per cent in cash. There will be no payment in the form of oil.

*What other companies or subcontractors will be involved?*

Of course we will prefer to employ Yugoslavian and Turkish firms as subcontractors, to the extent that they are competitive. But if they aren't competitive, there is nothing to stop us giving work to other international firms, as far as the financing is concerned.

is the latest in a series of dams being built to control water resources on Iraq's main rivers. The Qadisiya (Haditha) dam spans the Euphrates, the Saddam barrage the Tigris, the Dokan the Lesser Zab and the Darbendikhan the Diyala. There are also plans to build the Badush dam downstream of the Saddam dam, the Fatha barrage on the Tigris, just north of Baiji, plus dams on the Adhaim and Khazir rivers (Iraq, MEED Special Report, October 1985, page 19).

However, at a time when control of the country's water resources is of greater concern than ever as dam and water storage schemes on the Euphrates gain momentum in Syria and Turkey, the primary purpose of the Bekme project appears to be electricity generation. Irrigation networks will be built in later stages.

Still to be awarded is the mechanical and electrical order — contract 4B — for supply of six 256-MW turbines, plus generators, switchgear and control systems. Bids,

placed in June 1985, ranged in value between ID 56.4 million-146.1 million (\$182 million-471 million).

Three consortia are still in the running: the low bidder, a group comprising Austria's Elin-Union, the UK's Boving & Company and Sweden's ASEA; the second lowest, an Italian/South Korean consortium of Gruppo Industrie Elettromeccaniche per Impianti all'Estero (GIE), with Korea Heavy Industries & Construction Company and Hanyang Corporation, and the European Electro-Mechanical Consortium, which groups Brown, Boveri & Compagnie, Siemens and J M Voith — all of West Germany — Austria's J M Voith and France's Neyrpic. A recommendation as to the winning group is expected before the end of 1986 (MEED 6:7:85).

**JONATHAN CRUSOE in London  
and DAVID BARCHARD  
in Ankara**