

Changes in Iran's Standard Form of Energy Conversion Agreement and the New FIT Regime for Thermal IPP Projects

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The background

Following the Iranian government's privatisation initiative, the Ministry of Energy (**MoE**) developed standard forms of energy conversion agreement (**ECA**) in an attempt to attract private investment to thermal power plants. The MoE publishes two forms, one for BOO projects and the other for BOT ones. ECAs are entered into between an MoE affiliate entity (currently, the Thermal Power Plant Holding Company, or **TPPH**) and a private thermal power producer for the purchase of electricity. The standard ECAs were meant to be appealing enough for private investors, whether local or foreign. Yet, the rising inflation rate and considerable devaluation of the Iranian rial in the past year, along with the increase in power consumption and limited foreign investor participation due to US sanctions, have motivated the government to introduce new incentives.

A significant set of incentives was announced on 22 May 2019¹, when the government introduced changes to the ECA standard forms and in particular, the feed-in tariff (**FIT**) contained in them. The changes apply to ECAs with thermal power plants entered into following the announcement. Among other things, the base FIT in the ECAs will be increased, a formula for adjustment of this tariff has been introduced, and longer terms will be available for certain ECAs. On the other hand, the amount of power that TPPH is obligated to purchase under the new ECAs may be less than under the current regime.

Market participants will want to examine closely the net impact of these changes on particular potential projects. To assist in seeing the effect of the new FIT regime under different scenarios, we have created a spreadsheet model which we are happy to share with interested readers on request.

What has changed?

Base FIT

Until now, the base FIT has been a fixed amount announced by the Economic Council, most recently IRR 70 per kWh (for plants with 50% efficiency). This was equivalent to about EUR 0.0014 per kWh at the beginning of 2018 when the exchange rate was approximately IRR

¹ Announcement of the directive dated 11 March 2019, issued by the Economic Council.

50,000 per euro. By September 2019, the exchange rate was approximately IRR 125,000 per euro (at the open market rate), making the base FIT close to EUR 0.0006. Alongside current inflation of approximately 40% per annum, the negative impact of the existing arrangement on feasibility of projects is clear.

Under the new arrangement, the base FIT for large-scale thermal power plants is to be determined, with the approval of the Minister of Energy, through tenders conducted by TPPH. The introduction of tenders has been mooted for some time and represents a significant development in the market. For each new large-scale plant ECA, potential investors would compete with each other in a reverse auction, with the investor offering the lowest base FIT winning the ECA (assuming the offer is approved). The tenders will be held in accordance with TPPH's transactional regulations and the Tender Law of 2005.

The base FIT for small-scale² thermal power plants is to be determined based on the most recent tender results for large-scale plants, adjusted for efficiency, seasonality (per Table 1 below) and other circumstances³.

Adjustments to base FIT

The base FIT in new ECAs is subject to two adjustments: one intended to mitigate the impact of inflation and currency devaluation, and the other to take account of seasonality.

Under the new arrangement, the base FIT will be multiplied by the following adjustment coefficient for a period of: (i) 12 years from signing in BOO ECAs for large-scale plants; (ii) 9 years from signing in BOO ECAs for small-scale plants; and (iii) 20 years from signing in BOT ECAs:

$$\text{Adjustment Coefficient} = \left(\frac{CPI_{\text{Payment Date}}}{CPI_{\text{Base}}} \right)^{0.3} \times \left(\frac{FX \text{ Rate}_{\text{Payment Date}}}{FX \text{ Rate}_{\text{Base}}} \right)^{0.7}$$

Where:

CPI_{Payment Date} is the consumer price index for the 12-month period prior to a payment date

CPI_{Base} is the consumer price index for the 12-month period prior to signing of the ECA

FX Rate_{Payment Date} is the average daily EUR-IRR exchange rate announced by the Central Bank of Iran for the one-month period prior to a payment date

FX Rate_{Base} is the average daily EUR-IRR exchange rate announced by the Central Bank of Iran for the 12-month period prior to signing of the ECA

The base FIT is also subject to seasonal adjustment. After application of the Adjustment Coefficient above, the result is to be multiplied by the appropriate seasonal factor set out below.

² Small-scale power plants are those with generation capacity of 25 MW or less.

³ These "circumstances" are not specified in the new announcement.

Table 1: Seasonal Indices

| Season Hours | Spring | Summer | Fall | Winter |
|-------------------------------|---------------|---------------|-------------|---------------|
| Off-peak hours | 0.85 | 1.15 | 0.75 | 0.75 |
| Mid-peak hours | 0.95 | 1.4 | 0.95 | 0.85 |
| Peak hours | 0.95 | 1.5 | 0.95 | 0.95 |

Reduced guaranteed amount, but with compensation for low market price

Under the new ECAs, TPPH will assure, on a take-or-pay basis, the purchase of 50% of the “actual available capacity” at the base FIT specified in the ECA won in a tender (subject to the adjustments discussed above). According to TPPH, this represents a reduced purchase obligation compared to TPPH’s current practice of purchasing about 70% of the actual available capacity.⁴

Perhaps in an attempt to mitigate the impact of the reduced TPPH purchase obligation, the new ECAs have a formula compensating for any portion of power a producer sells in the open market at a low price: TPPH will pay such producer the amount (if any) by which the base FIT calculated for power sold to the open market (and adjusted based on the Adjustment Coefficient and the seasonality index above) would exceed the “average market price”⁵ in the wholesale market at the relevant time.

We note that some FIT payments have recently been delayed, and some payments have been made by delivery of government bonds, which must then be sold (generally at a discount) in the secondary market if cash is required.

An illustration and tool

We illustrate the operation of the new FIT regime here with a hypothetical example. The figures in this section have been generated using a spreadsheet model we have created for purposes of viewing the effects of FX rate, CPI, seasonal adjustment and low market price compensation in the new FIT regime. We are happy to share this spreadsheet with interested readers on request.

⁴ This appears to be a matter of TPPH practice rather than regulation.

⁵ The wholesale market price is given by the formula:

$$(IRR\ 185\ \text{per kWh} \times \text{applicable seasonal index per Table 1}) + IRR\ 417\ \text{per kWh}$$

Based on TPPH's response to our inquiry, even though the parameters in this formula were to be adjusted annually to reflect market conditions, the formula has only been adjusted once since its introduction in November 2012.

Table 2 below shows our calculation of the Adjustment Coefficient (reflecting changes in FX rate and CPI⁶) for a few hypothetical historical ECA signing dates and payment dates for a large-scale thermal power plant. We have assumed payment dates are semi-annual and start two years after the signing date. While the new FIT regime only applies to ECAs signed after May 2019, we have used historical signing and payment dates, and assumed the new FIT regime would apply to them, so that we can use actual historical (rather than hypothetical future) data on FX rate and CPI.

Table 2: Calculated Adjustment Coefficients

| Signing Date \ Payment Date | Jul 2016 | Oct 2016 | Jan 2017 | Apr 2017 | Jul 2017 |
|-----------------------------|----------|----------|----------|----------|----------|
| July 2018 | 1.40 | – | – | – | – |
| October 2018 | – | 1.37 | – | – | – |
| January 2019 | 1.40 | – | 1.37 | – | – |
| April 2019 | – | 1.41 | – | 1.38 | – |
| July 2019 | 1.48 | – | 1.44 | – | 1.40 |

We will use the highlighted entry from the table above for further calculations. Assume that an ECA was won with base FIT of IRR 500 per kWh, signed in January 2017 and has an initial power purchase payment date two years later in January 2019.

For the initial payment in January 2019, applying the Adjustment Coefficient of 1.37 from the above table and the winter seasonal indices of 0.75, 0.85 and 0.95, respectively, for off-peak, mid-peak and peak hours, under the new FIT regime TPPH will pay the following amounts for 50% of the plant’s actual available capacity:

Table 3: Adjusted FIT (for FX rate, CPI, Season)

| Generation hours | Adjusted FIT (IRR per kWh) |
|------------------|----------------------------|
| Off-peak hours | 513.75 |
| Mid-peak hours | 582.25 |
| Peak hours | 650.75 |

Now assume the plant manages to sell the remaining 50% of its power generation in the open market. The wholesale market price to be used to calculate any potential compensation for low market prices will be (see footnote 5):

$$(IRR\ 185\ per\ kWh \times applicable\ seasonal\ index\ per\ Table\ 1) + IRR\ 417\ per\ kWh$$

⁶ The Central Bank of Iran (CBI) last announced CPI in late November 2018. Given this, we have used CPI data published by the Statistical Center of Iran, a second official source of inflation data. But these two CPI sources have not always been close.

or:

Table 4: Wholesale Market Price

| Generation hours | Wholesale market price (IRR per kWh) |
|-------------------------|---|
| Off-peak hours | 555.75 |
| Mid-peak hours | 574.25 |
| Peak hours | 592.75 |

Under the new regime, the power plant would be entitled to additionally receive, as compensation for power sold in the open market, the amount (if any) by which the adjusted FIT (Table 3) exceeds the wholesale market price (Table 4):

Table 5: Low Price Compensation

| Generation hours | Compensation by TPPH (IRR per kWh) |
|-------------------------|---|
| Off-peak hours | 0 |
| Mid-peak hours | 8 |
| Peak hours | 58 |

ECA term

Under the new regime, the term of BOO ECAs with local investors⁷ has been extended from 5 to up to 7 years; and the term of BOT ECAs has been extended from 5 to up to 15 years provided that at least 70% of the BOT investment is foreign sourced.

Exchange rate

The new arrangement provides that CBI is required to exchange Iranian rial for the purpose of timely repayment of foreign currency loans for thermal IPP projects. In the past, CBI has used its official rate to support foreign currency needs under the ECAs. This official rate is a preferential rate, which in early September was IRR 46,000 per euro compared with an open market rate of about IRR 125,000 per euro. Assuming continuity in CBI practice, the difference between the official and open market rates represents a considerable advantage for new IPP investors in repaying their foreign currency project loans.

⁷ The announcement is not clear as to what level of local investor participation would be sufficient to qualify for longer-term ECAs. Also, limiting this incentive to local investors would seem to run against the general principle of national treatment for foreign investors with an investment license. It may be that the apparent discrimination is intentionally created to encourage foreign investment in BOT, rather than BOO, IPPs.

What's next?

- While the investor-friendly changes are a welcome development to maintain the relevance of ECAs for the private sector, the announcement is short on details. For instance, the relationship between TPPH's purchase obligation and its obligation to compensate producers for low market prices is ambiguous; it is not clear what "circumstances" are to be taken into account in determining base FIT for small-scale power plants; it is not known whether or not BOO ECAs with full or partial foreign investor participation can benefit from an extended term; in the absence of CBI's CPI numbers, it is unclear how the Adjustment Coefficient is to be calculated; and the details of how CBI is going to implement its currency exchange obligation is yet to be clarified, especially in light of the major and ongoing overhaul of Iran's foreign exchange regime. Due to these gaps, we expect to have further official guidelines spelling out some of these details as the new FIT regime is implemented. We also expect some of the above ECA changes (such as the introduction of tenders) will be replicated in power purchase agreements used in the renewables sector.



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