



EU ENERGY: SPECIAL REPORT

Croatia: the EU's newest energy market

June 2013

by Kimberly Peterson



Energy markets open up to join EU

On July 1, 2013 Croatia will become the 28th member of the EU, joining an internal gas and electricity market of some 500 million citizens and extending the EU's influence into the western Balkans. As part of its preparations for this, Croatia has opened up its gas and electricity markets, creating new opportunities for both domestic and foreign investors.

Croatia had to rewrite its four cornerstone energy laws to meet its commitments to implement EU energy legislation locally, as required by EU membership.

In November 2012 the Croatian government enacted a new Energy Act and a new Act on the Regulation of Energy Activities. In March, a new Electricity Act and a new Gas Act entered into force.

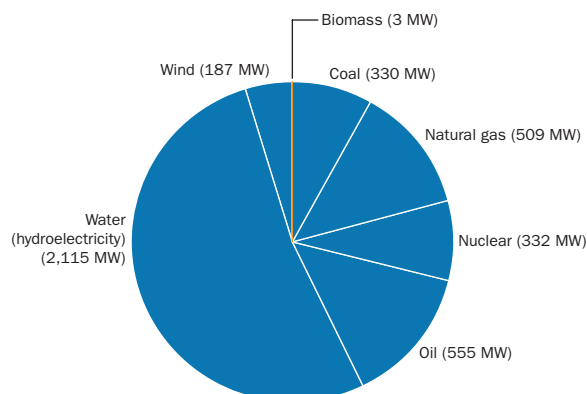
These laws had to be updated and changed to incorporate the many EU directives in the energy sector that have been passed since Romania and Bulgaria joined the EU in 2007.

Croatia has to fulfill the same criteria in energy as the countries that joined the EU in 2004 and in 2007, but the laws related to energy in the EU have changed significantly since 2007, said Marlene Holzner, spokeswoman for energy at the European Commission.

For example, the EU's third directives and regulations on electricity and natural gas, known as the third energy package, plus the renewable energy directive, energy efficiency directive and nuclear safety directive have all come into force since the last countries acceded in 2007, Holzner said. "In that sense the requirements for Croatia are more demanding," she said.

EU nuclear legislation is relevant to Croatia because Croatia's power company HEP owns a 50% stake in the Krsko nuclear power plant in Slovenia, near the Croatian border.

Croatia's electricity capacity by fuel type, 2012



Source: Platts PowerVision

One of the biggest changes to the Croatian energy market as a result of the new laws is that the energy regulator, HERA, has been given more independence and responsibility and now sets energy tariff rates (see *separate story*).

One of the most talked about changes is the requirement for Croatia's vertically integrated electricity company, the HEP Group, to separate – unbundle – its transmission system business from its generating business (see *separate story*).

On renewables, Croatia has already made permitting and licensing easier for small photovoltaic solar projects, and the government is considering ways to make the process easier for large energy projects and all types of renewable energy projects (see *separate story*).

With Croatia being a small country and so many required changes to legislation needed, some laws were passed in a rush, said Branka Jelavic, expert in renewable energy for the non-profit Croatian energy think tank the Energy Institute Hrvoje Pozar.

"We were just transposing laws from the EU and we didn't have time to think it over in detail and consider Croatian circumstances," Jelavic said. "We did something like that in biofuels, we set some goals that were not realistic."

Under the EU renewable energy directive, Croatia has a binding national target to source 20% of its final energy demand from renewables by 2020. That includes – as for all EU countries – a binding sub-target to source 10% of its transport energy from renewables. According to the EU's official statistics office Eurostat, Croatia sourced 15.7% of its final demand from renewables in 2011.

More to be done

There are more legislative changes to come. For example, the changes in the cornerstone laws will now require more than 70 sublaws to be passed by the Croatian government.

These will lay out in detail how the principles from the major umbrella laws will be carried out in practice, said Goran Majstrovic, department head for the power transmission and distribution section at the Energy Institute Hrvoje Pozar.

Croatia is also revising its nature protection act, which could have a significant impact on future energy projects, said Petra Santic, an attorney at Wahl Cesarec & Partners in Zagreb. The European Environmental Agency has described Croatia as “one of the richest European countries in terms of biodiversity.”

Under the revised proposal, about 37% of continental Croatia and 17% of its coast would be protected under the EU ecological network NATURA 2000, Santic said. The area designated to be part of the EU ecological network has to be verified by the EC, a process expected to take two to three years after accession.

During the verification process, there is a risk that some projects cannot go forward on the designated land. “Investors are concerned that this will have a negative impact on the realization of investment in infrastructure, energy and industry,” she said.

Another law currently being amended and changed is Croatia’s Mining Act. It was last amended in 2009, but this time the government wants to separate the exploration and exploitation of hydrocarbons in a separate act, said Miran Macesic, an attorney at Macesic & Partners in Zagreb.

“For the past year and a half they have been trying to pass new legislation because they know they had five or six interested investors who were ready to invest in exploration in Croatia,” Macesic said.

The Mining Act was passed at the end of April. However, the hydrocarbon legislation has gone through several drafts and has faced objections and opposition, and is still making its way through Croatia’s legislative procedure, said Ivana Manovelo, also an attorney at Macesic & Partners.

Hopefully by the end of the year tenders for the exploration and exploitation of hydrocarbons will be an open process to all investors, Manovelo said.

Public consultations

Every energy law change that took place was done in a transparent way with public consultation, said Kristina Celic, director for energy at Croatia’s Ministry of the Economy. Every law passed was subject to public discussion and was also posted on the ministry’s website so all citizens could make objections or show support for the laws before they were passed, she said.

Now that the laws have been passed, the government has to explain to citizens that did not take part in the consultation process how the laws have changed and how it impacts consumers. “I think it’s very important now to communicate these

Croatia: an overview by the numbers

Population 2011:



4.403 million

GDP 2011:



\$62.49 billion

Natural gas transport system 2011:



2,511 km

Natural gas consumption 2011:



3.309 Bcm

Installed electricity capacity*:



4.031 GW

Gross interconnection capacity (power):



15,000 MVA

2012 power flows to Croatia



13,191 GWh

2012 power flows from Croatia



5,568 GWh

*Includes 50% capacity of Krsko nuclear plant in Slovenia

Source: Eurostat, HEP-ops, The European Energy Handbook 2013

laws and what are the rights of each person buying electricity and gas, because the rights of customers are also higher than before, and they need to know them,” Celic said.

‘It’s like a wedding’

On July 1, when Croatia does enter the EU, there will be no miracle, Santic said. “It has been a really long process, and now it remains to be seen how these newly adopted laws will be enforced in practice,” she said.

Karmen Stupin, department head for energy management at the Energy Institute Hrvoje Pozar, compared Croatia’s EU accession to a wedding. “Expectations are created and then there’s a huge celebration, but things will happen afterwards, not just on that day. I think there are a lot of things expected afterwards,” Stupin said.

Celic said she understands there will still be work to do after July 1. “You are never finished with the energy sector, it is so dynamic,” she said.

But all the effort and changes required in Croatia should bring benefits to the country as a member of the EU, the EC’s Holzner said. “Croatia’s accession will further deepen its integration in the EU energy market and also increase its security of supply,” she said.

Already, legislative changes have happened, many of which would likely not have happened without EU membership requiring it, Majstrovic said. “I don’t think this level of restructuring or equality would happen if there was no EU accession. I’m quite sure it wouldn’t because it didn’t happen in other neighboring countries,” he said.

Government seeks foreign energy investors

Croatia’s government wants to kick start economic growth by encouraging investment in large energy projects and is hoping that investors from outside Croatia will help finance it. But a cumbersome and slow process for obtaining the licenses and permitting needed has caused several projects to be canceled in the past.

The government is focusing on energy generation projects to make the most of its good transport infrastructure for energy and its good connections with its neighbors, Kristina Celic, director for energy at Croatia’s Ministry of the Economy, said. “We always had good transport infrastructure and routes. We have high voltage infrastructure and oil pipelines,” Celic said.

In gas transmission, Croatia is connected to Slovenia and since August 2011 with Hungary, which Celic said has increased competition for natural gas in the region. In electricity, Croatia has interconnections with Bosnia Hertzegovena, Hungary, Serbia and Slovenia.

While Croatia has a little more than 4 GW of installed generation capacity, it has 15,000 MVA of gross installed interconnection capacity, said Goran Majstrovic, expert in electricity transmission and distribution for the non-profit Croatian energy think tank the Energy Institute Hrvoje Pozar. That means it would be easy for Croatia to export excess power generation. MVA is a measurement relatively close to MW that also takes into account the reactive power in the power load.

“For the past year and a half HEP Group has been open to strategic investors in power generation and has been encouraged by their government owners to proactively look for strategic investors,”

Zsuzsa Hargitai, director for the Croatia and Hungary office of the European Bank for Reconstruction and Development, said in mid-May. At the beginning of June, Hargitai took a new position at the EBRD’s head office.

One power project already reaching an advanced stage of planning is the proposed Plomin C thermal plant, a 500 MW coal-fired plant, said Zdeslav Cerina, CEO at national power grid operator HEP-ops.

“This is a project worth about €800 million so this is one of the key strategic investments for our government,” said Ivana Manovelo, an attorney at Macesic & Partners in Zagreb. “I believe it is a safe investment because it is going to happen,” she added.

On April 30, HEP issued the paperwork so the three qualified bidders could submit their binding offers to become strategic partners in the project. The three companies that qualify are Italy’s Edison, Kosep from South Korea and Marubeni from Japan.

The companies have until the end of October to submit their offers. “Selecting a strategic partner will be conducted by HEP according to the International Negotiating Process pursuant to the EU procurement directive,” HEP said at the time.

While this strategic project is moving forward, another one has stalled. In 2011, the EBRD signed a loan

agreement with HEP to carry out the biodiversity studies to get approval for a proposed €130 million underground hydropower plant with a capacity of 68.5 MW in Ombla, near Dubrovnik, Hargitai said. "This assessment has been made and now HEP is preparing its report," she said in mid-May.

However, on May 28, HEP announced it had canceled its loan agreement with the EBRD because the Environmental and Nature Protection Ministry advised that HEP must modify and adapt its initial plan for the hydro project. "Considering the time this procedure might take and with the aim of avoiding additional costs, HEP and the EBRD have cancelled the loan agreement," HEP said.

Renewables attract

Renewable energy projects provide probably the best opportunity for foreign energy investors in Croatia, according to Majstrovic. "The feed-in tariff incentives for wind farms in Croatia are relatively high, among the highest in the region," he said.

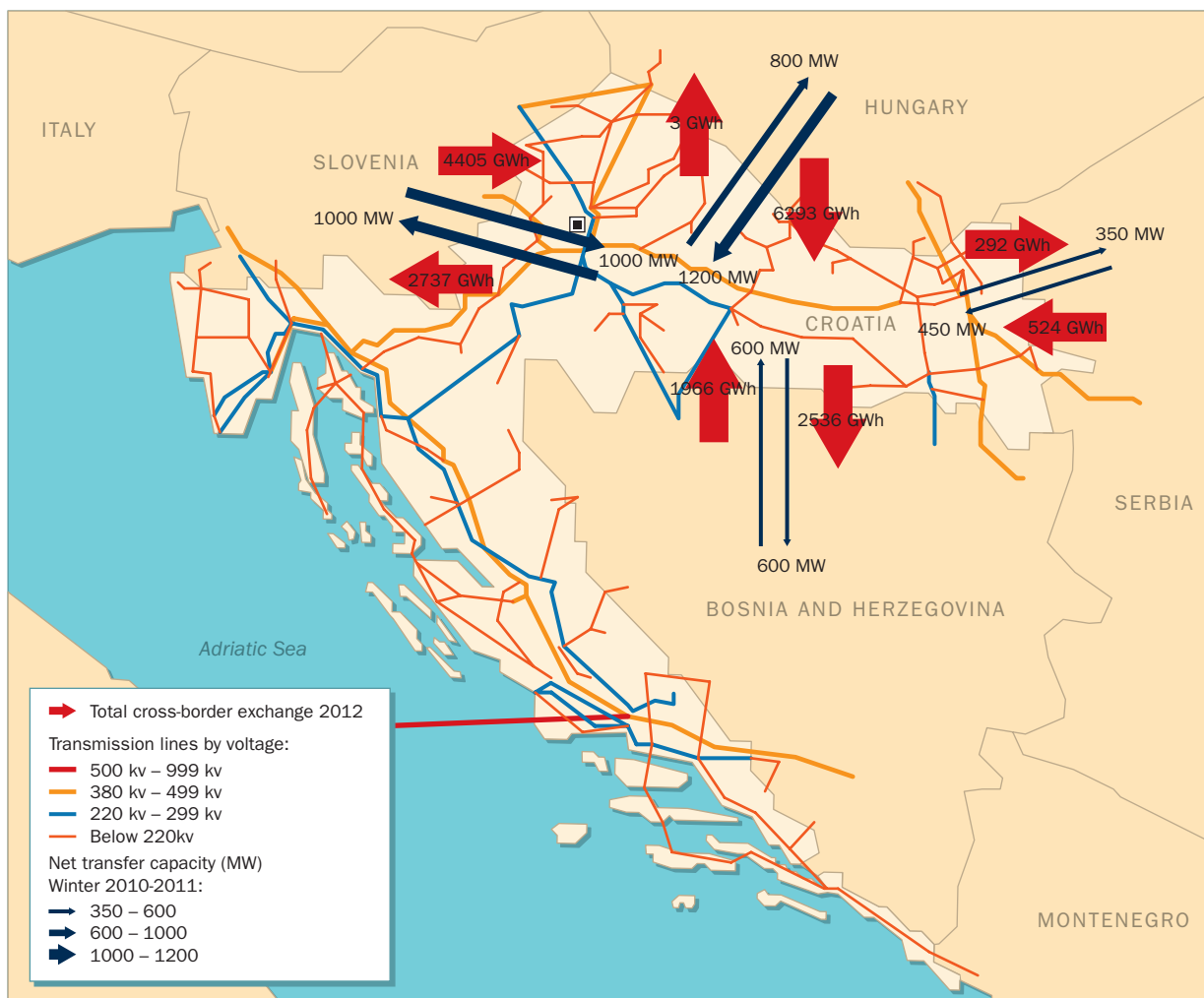
However, Celic said that as with many other countries, the government must balance the desire for increased renewable energy with the ability of the government to pay for the feed-in tariffs.

"We can support these renewables and we would like to see all (different types of renewables) in place," she said. "We have a problem, like in Europe, about how to make this thing sustainable."

A project is more likely to succeed when a foreign investor teams up with a Croatian partner, said Matthias Wahl, managing partner at law firm Schoenherr in Zagreb.

"I think it's very important to have this combination of local people who know how to deal with the local authorities and also with the other service providers needed together with companies from abroad who are already experienced in the field. That would be the perfect team I guess," he said.

Croatia's electricity grid and cross-border flows



Source: Platts PowerVision, HEP-Ops

Croatia's 2020 energy strategy foresees 1.2 GW of installed wind power by 2020. The government's strategy is binding but did not take into account what the electricity grid can handle, said Cerina. "You can't say, 'OK, we are going to develop 1,200 MW of wind power' if you don't have consumers to consume this kind of energy," he said.

The predictability and reliability of renewable energy is also an issue in Croatia because of its small size, according to Majstrovic. "Our country is relatively small in geographical terms and all those projects are all located on a small area a few hundred kilometers long. So when the wind blows, it blows everywhere. And when it stops, it stops everywhere," he said.

However, HEP-ops cannot only invest in renewables and maintain a stable grid, said Damjan Medimorec, director at HEP-ops. "In fact, we would like to have investments in the conventional sources in order to be able to accept more renewables because that will provide flexible generation capacity," Medimorec said. The biggest

obstacle to integrating renewables into the Croatian grid system is a lack of flexible generation capacity that can be quickly turned on or off as needed, he added.

Equal access for all

One of the key government goals has been to treat all investors equally whether they come from Croatia or another country, Celic said. "We have a regulatory framework that is the same for everybody who wants to come and operate here," she said.

The distribution of electricity is with and will remain with national transmission system operator HEP-ops, creating opportunities in the electricity sector. "Everybody who is coming to Croatia to produce or buy electricity will be treated in the same way on the level of distribution and transmission system operator. That's how the laws are written," Celic said.

On gas, Croatia would like to see the liquefied natural gas terminal project realized (see *separate story*). There are also plans to continue extending the gas

Croatia's gas grid



Source: Platts PowerVision

distribution system to bring gas to more customers in Croatia. "There is a big project of gasification of the coastal part of the country," said Majstrovic. "That will probably change the structure and consumption of electricity," he said.

Uncoordinated permitting and licensing

While investor interest in Croatia's energy market is increasing, the number of completed projects is much less than the number of inquiries, according to lawyers. Matthias Wahl, managing partner at law firm Schoenherr, attributed some of the failure to realize projects to the long and complicated process of obtaining the necessary licenses and permits in Croatia before construction can begin.

"Too many state authorities are involved in this licensing process and they don't communicate. The whole process still lacks coordination of state authorities and bodies," Wahl said.

Ivana Manovelo, an attorney at Macesic & Partners agreed. "Energy permits are a very complicated issue, but Croatia is actually unfortunately well-known for its bureaucratic long procedures," she said. "But there have been efforts to go there and shorten and facilitate these proceedings, especially for renewable energy."

In 2012 the government passed a law making the permitting easier for small solar projects in Croatia. The government recognizes that the complicated permitting is a problem, Celic said. "From the very beginning you need to have a clear procedure on what to do," Celic said.

Within the past two years, the government has created an agency for competitiveness and another for the energy sector.

"Both of them are working on that – to remove barriers," Celic said.

Light touch unbundling for power company

One of the most significant energy policy changes the Croatian government had to make before joining the EU was increasing the independence of the national electricity grid operator from the parent electricity generating company.

In Croatia, the HEP Group operates the country's more than 4 GW of installed generation capacity through various subsidiaries and it also owns HEP-ops, the power transmission system operator and HEP-ods, the power distribution company.

"That was one of the biggest discussions in the Croatian power sector in the past few years – how to unbundle the TSO," said Goran Majstrovic, expert in electricity transmission and distribution for the non-profit Croatian energy think tank the Energy Institute Hrvoje Pozar.

"HEP is an integrated group including transmission and distribution, and now it has to completely restructure," said Ivana Manovelo, an attorney at Macesic & Partners in Zagreb.

For several months, HEP-ops has been focusing on preparing its application to be certified as an independent transmission operator, Zdeslav Cerina, CEO at HEP-ops told Platts in mid-April. Under that model of unbundling, vertically integrated energy companies can retain some control over their grid subsidiaries, but only under strict regulatory supervision.

Practically, HEP-ops must separate many departments it currently shares with HEP Group. For example, the procurement of supplies and information technology services must all be separated from the parent company. "The company will change significantly," Cerina said.

This task of making the required changes and then submitting the paperwork for the application has been given "maximum priority" and the goal is to complete the application before July 1, Cerina said. But while focusing on the application, the company is continuing to do its daily task of balancing the Croatian power grid. "We aren't decreasing our security of supply due to these activities," he said.

The target is to submit the application to the Croatian energy regulator HERA by the end of June, although Cerina said that was a very ambitious goal.

The company is waiting for the Commercial Court in Zagreb to approve the company's name change from HEP-ops to HOPS, Damjan Medimorec, director at HEP-ops, said June 7. Once that is complete, the company expects to file its application for the certification of HOPS under the ITO unbundling model, hopefully by the end of June, he said.

Observers expect Croatia's electricity market to become more competitive as a result of unbundling. "Along with the new laws, foreign suppliers are allowed to join the market easily and then there will probably be a better investment climate, when the sublaws are adopted," Majstrovic said.

Originally, the plan was for the unbundling in Croatia to be completed on the same timeline as the countries within the EU, meaning March 2012, said Miran Macesic, also an

attorney at Macesic & Partners. "We were anticipating that the steps for the finalization of the unbundling process were to be taken last year, but this did not happen," he said.

To be successful, the employees of HEP-ops must understand their new role as well, which will not be so easy, said Tomislav Jurekovic, president of the board at national energy regulator HERA. "It is not an easy period for a traditionally vertically integrated company," he said. "When you have these kinds of companies, they inherit their company culture, managerial culture. These are vertically integrated companies not just practically, but mentally also."

HEP-ops has been aware of the third energy package in the EU since 2009 and also knew that Croatia was planning to join the EU and they could have planned better, Jurekovic said. "The management should have understood way back then that there were certain activities which will have to happen in the future and their preparations left much to be desired," he said.

Gas TSO already unbundled

The gas TSO, Plinacro, has been separated from its previous owner, oil and gas company INA Industrija Nafta for more than a decade, long before the EU's

third energy package required it. The reason was that the government's energy strategy from 2001-2002 called for a significant expansion of pipelines that would connect the north part of the country to the south part of the country with a single national natural gas distributor. To do that, the government decided that separating INA from Plinacro would make it more successful.

"It's interesting that in that moment, we understood the need to take natural gas transmission outside INA, not because of the directives of the EU, but because of the goal to gasify Dalmatia," said Damir Pesut, department head for energy system planning for the non-profit Croatian energy think tank the Energy Institute Hrvoje Pozar.

Plinacro must still be certified as an ownership unbundled TSO, but this certification is expected to be more straightforward than for HEP. "[Plinacro] has been separated and from the very start it has been cleared as ownership unbundled. There were never any questions about that...I don't really expect that we should have any major difficulties there," Jurekovic said.

Third time lucky for LNG?

For the third time in two decades, a plan is underway to build an LNG terminal on the island of Krk in the Adriatic sea. But this time the plan is to start with a small capacity and to increase it later.

The project is also a contender for being designated an EU project of common interest, which would give it access to faster permitting and EU funding. A feasibility study to make the case for the project is expected to be published later this summer.

"Geographically, the island of Krk is actually quite close to the heart of Europe," said Tomislav Jurekovic, president of the board at the Croatia's energy regulator HERA. Austria, the Czech Republic, southern Germany, Hungary and Italy and could all possibly benefit from the project.

The first attempt to develop the LNG terminal was at the end of the 1980s when Croatia was still part of Yugoslavia, but the project became a casualty of the Balkan wars of the 1990s, Jurekovic said.

Then in the early 2000s a consortium of private companies, including Germany's E.ON Ruhrgas and France's Total began work on building an LNG terminal in Krk, said Miran Macesic, an attorney at Macesic & Partners in Zagreb. But between the financial crisis in 2008, changes in the European natural gas market and developments in shale gas, the consortium decided the project was not feasible.

But a key component of the Croatian government's policy for economic growth is through investment in energy projects, Macesic said.

"Because the consortium gave up on the LNG project the government decided it would take the initiative through state-owned companies – basically HEP and Plinacro, so it formed a new company called LNG Croatia," Macesic said.

LNG Croatia was formed on June 2, 2010 as a joint venture between Croatia's gas transmission system operator Plinacro and HEP, the parent company of the integrated electricity HEP Group.

The terminal would ensure Croatia's own energy security for natural gas, but is also meant to be a regional project. "This LNG terminal will be for the region, for Croatia and for Europe," said Kristina Celic, director for energy at Croatia's Ministry of the Economy.

The proposed project is to build an LNG terminal in stages, starting with a boat LNG vessel offshore, then adding LNG storage onshore as required, and only if demand warrants it, move to a full onshore LNG terminal.



PLATTS POWERVISION

Platts PowerVision is adding Croatia to its core European power sector coverage, which includes monthly updates on the EU-28 member states as well as Switzerland, Norway and Iceland. PowerVision's research team maintains a comprehensive inventory of existing plants and tracks new build & conversion projects, plans to mothball and shut plants down, and ownership changes. PowerVision's geospatial database also features power and gas transportation infrastructure and tracks major new projects.

Two data packages have been created for southeast Europe (AL, BA, BG, GR, HR, KS, ME, MK, RO, RS, SI):

- A snapshot data file presenting installed and planned power plants, and
- a set of GIS map layers featuring power & gas transportation infrastructure and projects.

For more information on Platts power and gas infrastructure data in Croatia and southeast Europe, contact nathaniel.julien@platts.com. For more information on Platts PowerVision, visit: www.platts.com/products/powervision

"We are suggesting to the government to make a smaller capacity at this point," said Damir Pesut, department head for energy system planning for the non-profit Croatian energy think tank the Energy Institute Hrvoje Pozar. The Energy Institute is part of the consortium conducting the feasibility study.

The project will also need consumers from neighboring countries to make it possible. "The LNG terminal capacity is 5 billion cubic meters and Croatia needs 3 Bcm, so there are 2 Bcm of gas available for export," Macesic said.

Celic said that diversifying gas supply is a very important issue in the countries around Croatia and that landlocked countries near Croatia would also benefit. As the LNG project would benefit several European countries, she said she hoped it could become one of the first EU projects of common interest.

Such common interest projects will benefit from faster permitting – not more than about four years – and access to EU funding, such as the proposed multi-billion euro Connecting Europe Facility, under the EU's regulation to promote trans-European energy infrastructure that entered into force on May 15.

A draft list of EU projects of common interest published by the European Commission at the end of April included the LNG regasification vessel in Krk along with pipelines to Hungary, Slovenia and Italy as one of about 50 natural gas projects. The EC has to adopt a final list by September 30.

Zsuzsa Hargitai, director for the Croatia and Hungary office of the European Bank for Reconstruction and Development has overseen several plans for a Croatian LNG terminal and said in mid-May this one has an advantage over previous ones. "It looks more promising because we are not talking about a mega-LNG terminal," she said. At the beginning of June, Hargitai took a new position at the EBRD's head office.

And once the feasibility study is complete and LNG Croatia has found a strategic partner to help finance the project and provide experience in building the terminal, funding for the project could come from the EBRD. "Yes we would be interested subject to the usual commercial and environmental due diligence," said Hargitai.

Energy prices rise as market opens to EU

Croatian gas and electricity prices have risen dramatically since the government dropped regulated prices caps as part of its preparations to join the EU.

Under the previous system of regulated tariffs there were price caps, which were eliminated with the Act on the Regulation of Energy Activities and the new Energy Act laws, both passed in November 2012. "If we want to be part of the [EU] market we need to be open to these prices," said Kristina Celic, director for energy at Croatia's Ministry of the Economy.

The average increase in district heating prices last year was around 30% and maybe higher, said Tomislav Jurekovic, president of the board at Croatia's national energy regulator HERA. "It has represented a hike in heating costs, but heating prices had not changed from January 1, 2009," he said. "The prices in place last year were really distorted."

A change in the Regulation of Energy Activities law means that now HERA is responsible for approving regulated tariffs instead of the government.

Miran Macesic, an attorney at Macesic & Partners in Zagreb, said that before the changes energy prices in Croatia were below the EU average. Now that HERA must set the prices "they are no longer a social category but are market defined," he said. He expects the Croatian energy market to be more attractive to foreign investors as a result.

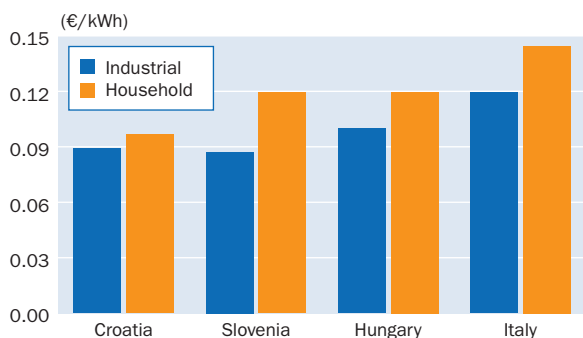
The change is a significant one for the regulator, which previously had only an advisory role on setting tariffs, said Branka Jelavic, expert in renewable energy for the non-profit Croatian energy think tank the Energy Institute

Hrvoje Pozar. "Now we expect [HERA] to be much more active, responsible and independent," Jelavic said. The regulator is also having to adjust to its new role of setting prices. "With the new authority of the regulator to do this, part of the negative reactions which always come in such situations are targeted toward the regulatory body now instead of the government," Jurekovic said.

The steep rises in energy prices have made the government prioritize helping customers who cannot afford to pay their energy bills.

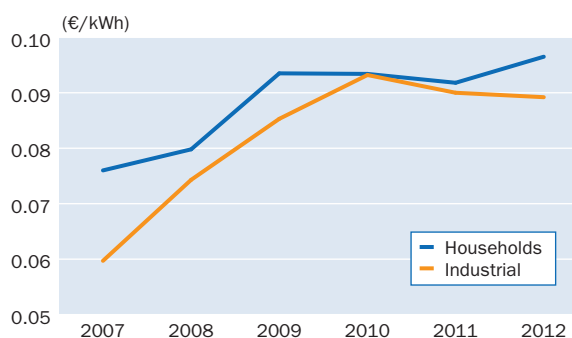
"What we are really looking to deal with are vulnerable customers," Celic said. She said the hope is to pass legislation to do this by the first half of 2014.

Electricity prices for industrial and household consumers* – 2012



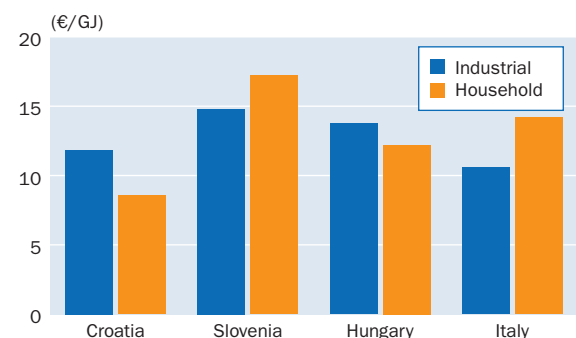
*Average national price charged to final consumers without taxes
Source: Eurostat

Croatia: average electricity prices for industrial and household consumers, 2007 – 2012



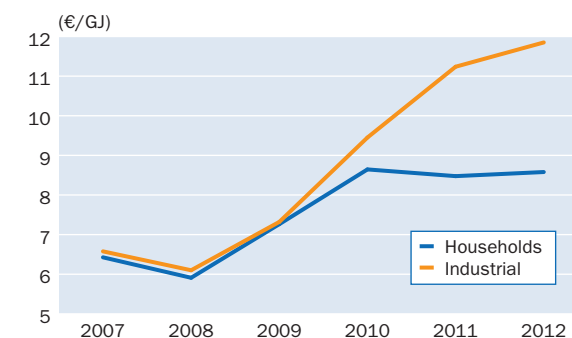
Source: Eurostat

Gas prices for industrial and household consumers* – 2012



*Average national price charged to final consumers without taxes
Source: Eurostat

Croatia: average gas prices for industrial and household consumers, 2007 – 2012



Source: Eurostat



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Editorial

Brussels: Siobhan Hall, Senior Editor

London: Kimberly Peterson, Associate Editor

Phone: +32-498-161306

Email: euenergy@platts.com

Managing Editor, Paul Whitehead

Global Editorial Director, Power

Sarah Cottle

Vice President, Editorial

Dan Tanz

Platts President

Larry Neal

Manager, Advertisement Sales

Kacey Comstock

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Latin America

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