MANAGING SUPPLY AND DEMAND OF NATURAL GAS IN MEXICO
EXECUTIVE SUMMARY

Between 2007 and 2012, the demand of natural gas in Mexico has increased by 17% while production has only grown by 2% during the aforementioned period. Decrease in prices over the past five years has boosted natural gas consumption for the generation of electric energy, oil recovery and its intensive use within the industry.

In 2011 and 2012, the increasing demand of natural gas as well as its limited production growth exhibited the incapacity of pipelines in the National Integrated Transport System (NITS) to supply consumption points in an adequate manner. From that point, several adjustments have been made in the transportation tariffs and doubts of the private sector have been cast over the authorities’ capability to offer sufficient natural gas at competitive prices.

In a scenario where the pipeline network integrated by NITS is expanding, CIDAC believes that emphasis should be put in the creation of an independent and technical managing institution, with a regional reach and enough autonomy to operate in order to provide a greater certainty for the operation of privately-owned pipelines, which will allow larger investments in building pipelines and will increase the availability of natural gas needed for Mexico’s industrial growth.

CONTEXT

Between 2007 and 2012, the demand for natural gas in Mexico has grown by 17% while production has only increased by 2% during the aforementioned time period. Two factors have combined to create such a discrepancy. On one hand, exploitation of non-conventional gas (also known as shale gas), has allowed increasing the reserves and production of natural gas within the U.S., creating a fall in prices nearing 70% since 2008. This has had direct implications on the domestic market, now that opportunity costs to settle the maximum prices of First Hand Sales (FHS) of Pemex Gas and Basic Petrochemicals (PGPB) are referenced in the relevant market located in southern Texas (Henry Hub), which is less expensive compared to other regions in the world (see map 1). This situation has discouraged the production of natural gas from Pemex

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1 Secretariat of Energy, 2012-2026 Natural Gas Market Outlook.
2 “The development of the Bakken (located in North Dakota) as well as the Eagle Ford and Permian (located in Texas) fields have generated eight consecutive annual increases in the United States’ proved natural gas reserves”. Adrian Lajous, “The future is here now. Notes regarding North America’s energy shift”, Nexos magazine, n. 426, Mexico, June 2013, pp. 29-30. Quoted on “3 Dilemmas: A Diagnosis for Mexico’s Energy Future”. Mexican Network of Competition and Regulation. CIDAC, 2013, p. 10.
3 Secretariat of Energy, op. cit.
4 “The methodology for the calculation of First Hand Sales (FHS) prices used by the Energy Regulation Commission (CRE) reflects the cost of opportunity and competition conditions of gas within the international market as well as the location where sales are made. The aforementioned cost of opportunity is linked to the North American market; taking the southern Texas market (Henry Hub) as reference. CRE uses cost of opportunity as criteria due that the natural gas market in Mexico doesn’t have competitiveness conditions that will allow the establishment of sale prices according to the convergence between the availability of payments and the availability of selling natural gas. As will be seen further on, the control of Pemex Gas and Basic Petrochemicals (PGPB) on the technical features of pipelines operation limit the operations undertaken by CRE to establish transportation tariffs and competitive sale prices. For further detail, see
Exploration and Production (PEP) due that it is more profitable focusing on oil production rather than natural gas (see graph 1).

This behavior has boosted the consumption of natural gas as an input in the generation of electric energy and increased its use in the recovery of oil from PEP. For 2012, the electric (both public and private) as well as the oil sectors gathered 66% of the total of natural gas consumption (39% and 27%, respectively), with annual growth rates of 10.7% and 4.8% during the last 10 years (see frame 1). This tendency has been combined with an energy policy, appearing since the mid-1990s, in the face of construction and reconversion of power plants (see frame 2), from which it is forecast that natural gas will be the energy source to produce 49% of electricity in 2026, compared to the 45.1% observed in 2012. 5 On the other hand, even when the industrial sector was involved with 14% of natural gas consumption in 2012, its use reaches levels close to 65% compared to other energy sources in the last ten years. In the aforementioned period, the industries that have presented the greatest growth are metallic products, machinery and, during the last year, food, as well as beverages and tobacco. 6

The growing demand of natural gas and the limited growth of its production have increased imports, especially between 2011 and 2012 (see graph 2). This situation has exhibited the incapacity of pipelines in National Integrated Transport System (NITS) to supply points of consumption in an adequate manner (see graph 3). In a scenario where PGPB estimates an increase of demand higher than the supply of natural gas (3.6% vs. 1.6%) for the 2012-2028 period, 7 the STNI infrastructure needs to expand and transform from one oriented towards exports to one inclined to the supply of imported natural gas.

In that sense, the federal government’s strategy has focused on increasing the transport capacity of natural gas, aiming to interconnect the southern part of the U.S. (Arizona and Texas) with border states such as Tamaulipas, Chihuahua and Sonora (see map 2). Until now, actions have included the lease to build the Los Ramones pipeline, which will enable to expand the pipeline network that go from Texas to the industrial zone in central Mexico. 8

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5 Federal Electricity Commission, quoted on “3 Dilemmas, op. cit., p. 40
7 PEMEX, PEMEX GAS AND BASIC PETROCHEMICALS, 2013. Informativ Session of Los Ramones Project, PHASE II.
8 According to information provided by PGPB, the project’s phase I will consist in the construction of a pipeline of 48 inches in diameter with an approximate distance of 114 km, running from Frontera to Los Ramones. This part will have a capacity of 2.1 billion cubic feet per day and is expected to start operating on December 1, 2014. Phase II will cover the Los Ramones-Guanajuato route with a distance of 740 km and a pipeline of 42 inches of diameter, which will cross through the states of Nuevo León, Tamaulipas, San Luis Potosí, Querétaro and Guanajuato; it will have a maximum capacity of 1.4 billion cubic feet per day. It is expected that this project will start operating during 2015 (see PEMEX, PEMEX GAS AND BASIC PETROCHEMICALS, 2013. Informative Session of Los Ramones Project, PHASE II). In sum, the Los Ramones project will represent a 10% increase, approximately, over the 8,295 km that SNTI currently has. (Own calculation using data provided by PEMEX, Labor Memories, 2012 p.16).
**About CIDAC**

CIDAC (Centro de Investigación para el Desarrollo, A.C.) is an independent, non-profit think tank that undertakes research and proposes viable policy alternatives for the medium and long-term development of Mexico. It elaborates proposals that contribute to strengthening the Rule of Law, creating favorable conditions for Mexico’s economic and social development and enriching Mexican public opinion and providing analyses and information for societal decision-making.