

April 2012

The Growing Latino Population and the Impact on the Oil and Natural Gas Industry and American Energy Security

Omar De Leon, 2011–12 CHCI-API STEM Graduate Fellow

Abstract

Addressing our nation's energy problems is a long-term challenge. Americans make up less than 5% of the world's population but consume one-fifth of the world's total energy demand. Oil and natural gas account for almost two-thirds of this energy demand. As the fastest growing racial/ethnic demographic in the U.S., the Hispanic population will have an important role in how we address these energy challenges. Hispanics will be the source of a growing portion of the nation's increased energy demand, and while per capita energy consumption is the lowest among all racial/ethnic demographics, this number is expected to increase. Accounting for three-quarters of the nation's workforce growth into the next decade, Hispanics will also serve as a large source of human capital that will be needed in many industries. Their ability to succeed in STEM fields will be critical for the nation's competitiveness, including that of the oil and natural gas industry. This may impact how well the industry can meet future demand for increased domestic production and increase America's energy independence. This paper takes a look at the implications the growing Hispanic population, as consumers and workers, may have on the oil and natural gas industry, and ultimately American energy security.

Introduction

Energy plays a vital role in any given country as a fuel that powers the economic engine (Nandakumar, 2007). Fueled by development in emerging economies around the world, global energy demand is expected to increase by more than 50% by 2035 (Energy Information Administration, 2011). Until recently, the U.S. was the world's biggest energy consumer and U.S. demand is expected to increase 10% by 2035 (EIA-A, 2012). In order to help meet American energy demand, the U.S. has to import much of the energy resources, particularly oil from foreign nations. While currently at a 12-year low, dependency on foreign nations for the energy that fuels the American economy is at the core of American energy security concerns (EIA-B, 2012).

Long-term measures to increase energy security include exploiting domestic energy resources and reducing overall demand through energy conservation measures. Domestic energy production has substantially increased with less than half of oil consumption currently being imported. While currently the U.S. ranks 7th in energy consumption per capita around the world, U.S. per capita consumption is expected to gradually decrease with improvements in energy efficiency. However, future energy demand is nonetheless expected to increase with the growth of the U.S. populace.

There is previous literature and discussion about potential impacts that the oil

and natural gas industry has on minority communities — whether it be from rising energy costs or environmental justice concerns (America's Power, 2012; Center for American Progress, 2008; Natural Resources Defense Council, 2004). However, this paper focuses on how the Latino¹ community, from its strength in growing numbers, will impact the oil and natural gas industry via larger energy demand and changing workforce trends — and ultimately how this may impact American energy security.

Hispanic Energy Demand

Over the past decade, the Latino population in the U.S. grew 43% to 50.5 million in 2010 (Census Bureau, 2011). Hispanic growth also accounted for more than half of the nation's population growth, 56% to be precise, from 2000 to 2010 (Census Bureau, 2011). During the same period, overall Hispanic purchasing power more than doubled and is now estimated at \$1.2 trillion a year (Selig Center for Economic Growth, 2009). As a result, there has been an increased demand from the Latino community for many products and services — energy being one of them. As the fastest growing demographic² in the U.S., it is important to understand the impact and factors that influence Hispanic energy demand as a means to reducing the country's energy consumption and vulnerability to foreign energy resources (Adua & Sharp, 2011).

With growing numbers, Latinos have taken up a larger share of overall personal transportation energy demand⁴ in the U.S. In 2010, Hispanics accounted for almost 13% of U.S. gasoline and motor oil consumer expenditures — up from 8% in 2000 (Bureau of Labor Statistics, 2010).

Transportation Demand

In the U.S., the predominant mode of travel is by passenger vehicles³, accounting for 25% of passenger miles traveled in 2009 (Department of Transportation, 2011). While the U.S. has less than 5% of the world's population, it accounts for 19% of the world's cars, compared to 4% in China, 9% in Japan, 6% in Germany, and 3% in Canada (Center for Sustainable Systems, 2011). With the growth of the Hispanic population in the U.S., it is important to understand the transportation energy consumption trends of this community and the possible implications on future energy demand — particularly considering that transportation accounts for 72% of oil use in the U.S. and two-thirds of that is from gasoline (EIA-A, 2010).

With growing numbers, Latinos have taken up a larger share of overall personal transportation energy demand⁴ in the U.S. In 2010, Hispanics accounted for almost 13% of U.S. gasoline and motor oil consumer expenditures — up from 8% in 2000 (Bureau of Labor Statistics, 2010). During the same period, the shares for non-Hispanic Blacks did not change significantly from 9% to 10% and actually decreased from 83% to 78% for non-Hispanic Whites (BLS, 2010).

Hispanic households have consistently shown high demand for personal transportation energy — in the form of gasoline and motor oil — compared to other demographics. Despite having markedly lower average income levels, Hispanics spend more on gasoline than their non-Hispanic⁵ counterparts. In 2010, Hispanic households earned 22% less income than non-Hispanic households (BLS, 2010). However, that same year Hispanics spent 3% more on gasoline and motor oil than non-Hispanics, and the previous year 7% more (BLS, 2010). It is important to note that averaged expenditures for Latinos may be influenced by the prices and con-

ditions of certain states with higher concentration of Latinos.

Hispanics consume more gasoline and motor oil in spite of owning fewer vehicles than non-Hispanics. Hispanics are almost twice as likely not to own a car compared to non-Hispanic Whites (BLS, 2010). On average, there are 1.6 vehicles per Hispanic household compared to 2 vehicles per non-Hispanic household (BLS, 2010).

Higher consumption may be attributed to Hispanic households generally being larger than non-Hispanic households. In particular, Hispanic households have, on average, more wage-earners and more children than non-Hispanic households (BLS, 2010). Adults who are employed travel by vehicle more often than those not employed and adult members of families with children make more trips as well (Department of Transportation, 2000). There are almost twice as many children in Hispanic households than in non-Hispanic households (BLS, 2010), which may also result in increased vehicle travel for Hispanic families.

In 2010, the median age of the Hispanic population was 27.5 compared to 41.3 for non-Hispanic Whites and 36.9 for all races/ethnicities (Census, 2012). While Latino households have higher transportation energy demand, given larger and younger households, per capita consumption is among the lowest. Low per capita residential energy consumption may explain why, from 2000 to 2010, Latinos accounted for more than half of the U.S. population growth (Census Bureau, 2011), but only 18% of the growth in overall U.S. gasoline and motor oil consumer expenditures (BLS, 2010). As the average age of the Latino population increases, per capita demand is likely to increase.

When considering expenditures on public transportation, there is negligible difference between total expenditures on transportation energy among Hispanics

and non-Hispanics (BLS, 2010). However, it is important to note that in general Hispanics prefer passenger vehicles as a mode of transportation, which may be attributed to Latinos having larger households. Considering that Latino population growth is projected to account for more than half of the U.S. population growth from 2010 to 2020 (Ortman & Guarneri, 2009), this presents strategic opportunities to help lower overall transportation energy demand and advance U.S. energy security.

Residential Demand

Residential energy⁶ demand is supplied predominantly in three categories: electricity, natural gas, and fuel oil and other fuels⁷. Overall, the residential sector has seen demand for natural gas and fuel oil and other fuels decrease over time prompted mostly by increased demand for electricity (EIA-B, 2010). With the Latino population growing at a faster rate than any other demographic, it is important to understand the residential energy consumption trends of this community and the possible implications on future energy demand — particularly with the growth of natural gas use for electricity generation (EIA-B, 2010).

Similarly to transportation energy demand, Hispanics have taken up a larger share of overall residential energy demand in the U.S. Hispanics now account for 11% of all residential energy expenditures compared to only 7% in 2000 (BLS, 2010). During the same time period, residential energy expenditure shares for non-Hispanic Blacks increased slightly from 12% to 13% and decreased for non-Hispanic Whites from 81% to 77% (BLS, 2010). However, despite rapid population growth, Latinos do not have a strong residential energy demand compared to other demographics. From 2000 to 2010, only 17% of the growth in overall residential energy expenditures

While Latino population growth is fueling a larger Latino market share for energy demand, it is also significantly contributing to the growth of the U.S. labor market, including that of the oil and natural gas industry.

came from Latinos (BLS, 2010).

In 2010 there were 3.3 persons living in Hispanic households compared to 2.4 in non-Hispanic household (BLS, 2010). With more Hispanics living in each household, most would assume that energy consumption would be higher amongst Hispanic households. However, Latinos actually have the lowest household residential energy demand when compared to other demographics. In 2010 Hispanics spent 14% — almost \$300 — less on home energy use than non-Hispanics (BLS, 2010). Hispanics spent 7% less than non-Hispanics on electricity, 15% less on natural gas, and 74% less on fuel oils and other fuels (BLS, 2010). It is important to note that averaged expenditures for Latinos may be influenced by the prices and conditions of certain states with higher concentration of Latinos. California, which has a higher population of Latinos, has low per capita energy consumption, in part due to mild weather that reduces energy demand for heating and cooling (EIA, 2009).

Lower residential energy demand may be attributed to Hispanics having smaller homes. In 2005, Hispanic homes averaged around 1500 square feet while non-Hispanic Black homes averaged over 1900 square feet and non-Hispanic White homes averaged over 2300 square feet (EIA, 2005)⁸. Lower residential energy demand may also be attributed to Latinos having more working members in each household. Hispanic households had an average of 1.5 wage-earners compared to 1.3 for non-Hispanic Whites and 1.1 for non-Hispanic Blacks (BLS, 2010). With more individuals out most of the day working, residential energy demand will tend to be lower.

Not only do Latinos have lower residential energy demand per household, but with larger households, per capita residential energy demand is also the lowest compared to other demograph-

ics. In 2005, Hispanics consumed 36% less energy per capita at home than non-Hispanic Blacks and 46% less per capita than non-Hispanic Whites (EIA, 2005). In other words, the average Hispanic family of four consumes less energy than a non-Hispanic Black family of three and slightly more energy than a non-Hispanic White family of two.

Non-Hispanics have almost double the residential energy demand of Hispanics and while the Hispanic population is rapidly growing, their per capita residential energy demand remains relatively low having grown only 8% from 2001 to 2005 — similar to the 5% growth shown by non-Hispanics (EIA, 2005). Having a low per capita residential energy demand among the fastest growing demographic in the U.S. is a positive attribute for helping lower our overall energy demand and helping advance U.S. energy security. While energy efficiency improvements at the residential level can help lower residential energy demand even more among Latinos, knowing that this community has a relative high demand for personal transportation energy presents strategic opportunities for targeted energy efficiency improvements that may have a larger impact — especially considering that the U.S. has the highest level of passenger travel per capita in the world (International Energy Agency, 2011).

Hispanic Workforce Supply

While Latino population growth is fueling a larger Latino market share for energy demand, it is also significantly contributing to the growth of the U.S. labor market, including that of the oil and natural gas industry. In 2010, approximately 26% of the oil and gas industry⁹ workforce was comprised of minorities — approximately half of which were Hispanic (Equal Employment Opportunity Commission,

2010). The representation of Latinos in the oil and natural gas industry has grown slowly over the years having been about 11% in 2004 and is currently at approximately 13% (EEOC, 2010). However, the oil and gas industry is still slightly below the national aggregate of 15% Hispanics in the workforce in (BLS-B, 2010). With an estimated 2.2 million workers in the oil and natural gas industry (PricewaterhouseCoopers, 2011), an additional 50,000 Hispanics — almost one-fifth of those already in the industry — would need to be hired in order to reach the national aggregate.

Latinos are projected to be the main driver of growth in the American workforce in the coming decades. Considering that from 2010 to 2025, domestic crude oil production and natural gas production are expected to increase by 17% and 20% (EIA-A, 2012), respectively, ensuring that there is adequate domestic talent among this new workforce is paramount for oil and natural gas industry competitiveness and ultimately U.S. energy security.

Workforce Growth

With the sheer growth in the number of Latinos in the workforce, the oil and natural gas industry will likely find itself hiring an increasing number of Latinos in the next decade. Latinos are projected to account for 74% of the growth in the nation's workforce in the next decade — having been only 54% from 2000 to 2010 and 36% from 1990 to 2000 (BLS-A, 2012). In the next decade, Hispanics are expected to add 7.7 million workers to the labor force while non-Hispanic Whites are expected to decline by 1.6 million (Pew Research Center, 2012). The share of the workforce that is Hispanic is projected to increase from 15% in 2010 to 19% in 2020, partly due to the large young and rapidly growing Hispanic population as well as the decline in the non-Hispanic White labor force from aging (Pew Research Center, 2012).

The growth of Latinos in the workforce can be seen with post-recession employment gains being obtained mostly by Latinos. While only accounting for 15% of the workforce, Latinos have secured half of the employment gains since the economy began adding jobs in early 2010 (BLS-A, 2012).

The growth of Latinos in the workforce can be seen with post-recession employment gains being obtained mostly by Latinos. While only accounting for 15% of the workforce, Latinos have secured half of the employment gains since the economy began adding jobs in early 2010 (BLS-A, 2012). Of the 2.3 million jobs added to the economy in 2011, 60% were filled by Latinos (BLS-A, 2012). This may be because Latinos tend to be more mobile and willing to take low-wage, temporary jobs, in other locations (National Poverty Center, 2007). Hispanic-owned businesses are also the fastest growing small business sector, expanding at nearly twice the rate of the national average between 2002 and 2007 (Department of Labor, 2011) and is likely to continue into the coming decade.

Growth of the Hispanic workforce can also be seen with growth in Hispanic college enrollment levels. From 2009 to 2010, the number of Hispanic young adults enrolled in college grew by 349,000, compared with an increase of 88,000 young non-Hispanic Blacks and 43,000 young non-Hispanic Asian-Americans and a decrease of 320,000 young non-Hispanic Whites (Pew Hispanic Center, 2011). As a result of these shifts, young Hispanics for the first time outnumbered young non-Hispanic Blacks on campus, even though black college enrollment has also grown steadily (Pew Hispanic Center, 2011).

While increased Latino enrollment in college is due in part to population growth, it is also the result of significant educational strides. While the Latino 18- to 24-year old population grew 38% from 2000 to 2010, the number of Latino high school completers grew 68% and the size of the young Latino college student population has more than doubled during the same time period (Pew Hispanic Center, 2011). In October 2010, the Hispanic high school completion rate reached its highest level on record at nearly 73%, up from

70% the previous year (Pew Hispanic Center, 2011). In October 2010, a record 44% of young Hispanic high school completers were enrolled in college, up nearly 5 percentage points from the previous year (Pew Hispanic Center, 2011).

While a projected increase in workforce is crucial to ensuring the energy demands of our society, it is even more crucial that this workforce be adequately prepared for jobs that will be needed to ensure American competitiveness, particularly in the fields of science, technology, engineering and mathematics (STEM). By 2018, eight million U.S. jobs will be available in the STEM fields; however, it is projected that the next generation of American employees will be largely unprepared for these jobs (Center on Education and the Workforce, 2010).

Industry Potential

While the number of Latinos in the oil and natural gas industry is underrepresented, with growth in numbers, the Latinos population has strong potential to strengthen the industry workforce needed to help meet the demand of increased domestic production — particularly in STEM fields where Latinos currently make up only 6% of the workforce (Department of Commerce, 2011).

STEM occupations are critical to our continued economic competitiveness because of their direct ties to innovation, economic growth, and productivity (Center on Education and the Workforce, 2011). There is a persistent concern that the U.S. is not producing enough STEM workers to compete successfully in the global economy (Center on Education and the Workforce, 2011). While Hispanics and non-Hispanics have nearly identical interests in pursuing STEM degrees, Hispanics and non-Hispanic Blacks are less likely to finish these degrees compared to non-Hispanic Whites (Higher Education Research Institute, 2010). Approximately

22% of Hispanic undergraduate students complete STEM bachelor's degrees in five years compared to 33% of non-Hispanic Whites and 18% of non-Hispanic Blacks (HERI, 2010). Helping raise the level of STEM degree completion is imperative to the nation's competitiveness and involves strategic partnerships and investments in pre-college education in order to provide adequate educational preparation (Department of Commerce, 2012). Considering that in 2010 almost 1 in 4 children under the age of 17 were Hispanic and by 2035 it is expected to reach 1 in 3 (Pew Hispanic Center-B, 2011), targeting Hispanic children will be crucial in helping address our STEM completion rates.

While early action within childhood education will have the largest impact on overall STEM-degree completion, those that have not yet enrolled in college also present a good immediate opportunity for the oil and natural gas industry. Enrolling in college directly from high school is not possible for everyone given some individuals many need to work to pay for college (Carnevale et al., 2011). Latinos are among these students that often pursue undergraduate studies in ways that make it more difficult for them to complete formal degrees and awards (Pew Hispanic Center, 2004). This indicates the importance for establishing lower cost one- and two-year educational and training opportunities that will help increase our STEM educated workforce. Much of the growth in college enrollment for Latinos has been at the community college level (Pew Hispanic Center, 2011) in large part due to easier access and lower costs. As the gateway for much of the Latino community into postsecondary education, community colleges have excellent potential for fostering educational and training opportunities for Latinos in STEM fields.

Due to strong demand from Barnett Shale oil and natural gas development in

Projected as the main driver of the nation's workforce growth in the next decade, the ability for Hispanics to succeed in STEM fields will be critical for America's competitiveness, including that of the oil and natural gas industry.

Texas, beginning in late 2008 North Central Texas College began to offer a one-year certification program and a two-year Associate Degree in Oil and Gas Production Technology (North Texas Central College, 2012). Program graduates with no prior field experience enter core jobs with anticipated annual salaries of \$40,000 (NCTC, 2012). Tuition for eligible local residents is as low as \$1,300 for the one-year certification program and as low as \$1,500 per year for the two-year associate's degree (NCTC, 2012). Other programs include community-based job training grants – supported by the Department of Labor's Employment and Training Administration — which work with community colleges to provide job training and certification. One example is ShaleNET which helps meet the workforce demands from Marcellus Shale natural gas development in Pennsylvania and Ohio — especially considering that 47% of a natural gas well's workforce consists of jobs that do not require a four-year degree (ShaleNET, 2011).

Programs of this nature can help bolster the oil and natural gas workforce with qualified labor from other fields with highly transferrable skills — such as construction and production — that seek low-cost one- or two-year education programs which may lead to high-paying wages¹⁰. These other industries not only have a higher representation of Hispanics, but they also have amongst the highest unemployment levels (BLS-B, 2012). Additionally, Latinos are located in areas where there is a large industry presence making them likely candidates for training programs of this kind. Within the top ten states with highest employment impact from the oil and natural gas industry are seven of the most highly Latino populated states (PwC, 2011). While not discussed in this paper, it is important to note the role that improved and strategic retention plays in attracting and maintaining a qualified Latino workforce in the oil and natural gas industry.

Summary

As a result of a rapidly growing population, Hispanics can have a large impact on the oil and natural gas industry and American energy security. Growth of the Hispanic population will potentially fuel increased demand for energy from Hispanics into the future. However, due to lower per capita energy consumption among Hispanics, particularly with residential energy, their population growth is expected to place less of a burden on future energy demand than their non-Hispanic counterparts. Population growth of the Hispanic community in the U.S. will also play an important role in the oil and natural gas industry workforce. Projected as the main driver of the nation's workforce growth in the next decade, the ability for Hispanics to succeed in STEM fields will be critical for America's competitiveness, including that of the oil and natural gas industry. This will ultimately impact how well the industry can meet future demand for increased domestic production and subsequently decrease America's reliance on foreign energy resources. As the fastest growing racial/ethnic demographic of consumers and workers in the U.S., Hispanics will undoubtedly play a pivotal role in the nation's future energy security.

References

- Adua, L. & Sharp, J. (2011). Explaining Residential Energy Consumption: A Focus on Location and Race Differences in Natural Gas Use. *Journal of Rural Sciences*, 26(1): 107–141.
- America's Power. (2012). Energy Cost Impacts on American Families. American Coalition for Clean Coal Electricity. Retrieved from http://www.americaspower.org/sites/default/files/Energy_Cost_Impacts_2012_FINAL.pdf
- Bureau of Labor Statistics (BLS). (2010). Consumer Expenditure Survey. Retrieved from <http://www.bls.gov/cex/>
- Bureau of Labor Statistics-A. (2012). Labor Force Projections to 2020: A More Slowly Growing Workforce. Retrieved from <http://www.bls.gov/opub/mlr/2012/01/art3full.pdf>
- Bureau of Labor Statistics-B. (2012). Economic News Release: Employment Situation. Retrieved from <http://bls.gov/news.release/empsit.toc.htm>
- Carnevale, A., Smith, N., Stone, J., Kotamraju, P., Steuernagel, B., Green, K. (2011). Career Clusters: Forecasting Demand for High School through College Jobs 2008–2018. Retrieved from <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/clusters-execsum.pdf>
- Census Bureau. (2011). Income, Poverty, and Health Insurance Coverage in the United States: 2010. Retrieved from <http://www.census.gov/prod/2011pubs/p60-239.pdf>
- Census Bureau. (2012). 2010 Census Data Products: United States. Retrieved from <http://www.census.gov/population/www/cen2010/glance/>
- Center for American Progress. (2008). Rising Gas Prices Add to the Strain on Families' Already Squeezed Budgets. Retrieved from http://www.americanprogress.org/issues/2008/06/pdf/food_gas.pdf

- Center for Sustainable Systems (CSS). (2011). Personal Transportation Factsheet. Retrieved from http://css.snre.umich.edu/css_doc/CSS01-07.pdf
- Center on Education and the Workforce. (2010). Help Wanted: Projections of Jobs and Education Requirements through 2018. Retrieved from <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/ExecutiveSummary-web.pdf>
- Center on Education and the Workforce. (2011). Science, Technology, Engineering, and Math (STEM). Retrieved from <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/stem-execsum.pdf>
- Department of Commerce (2011). Education Supports Racial and Ethnic Equality in STEM. Retrieved from http://www.esa.doc.gov/sites/default/files/reports/documents/education-supports-racial-and-ethnic-equality-in-stem_0.pdf
- Department of Commerce. (2012). The Competitiveness and Innovative Capacity of the United States. Retrieved from http://www.commerce.gov/sites/default/files/documents/2012/january/competes_010511_0.pdf
- Department of Labor. (2011). The Hispanic Labor Force in the Recovery. Retrieved from http://www.dol.gov/_sec/media/reports/HispanicLaborForce/HispanicLaborForce.pdf
- Department of Labor. (2012). Occupational Outlook Handbook 2012-2013 Edition: Oil and Gas Workers. Retrieved from <http://www.bls.gov/ooh/construction-and-extraction/oil-and-gas-workers.htm>
- Diamond, R. & Moezzi, M. (2004). Changing Trends: A Brief History of the U.S. Household Consumption of Energy, Water, Food, Beverages and Tobacco. Lawrence Berkeley National Laboratory. Retrieved from http://epb.lbl.gov/homepages/rick_diamond/LBNL55011-trends.pdf
- Equal Employment Opportunity Commission (EEOC). (2010). Job Patterns for Minorities and Women in Private Industry (EEO-1). Retrieved from <http://www.eeoc.gov/eeoc/statistics/employment/jobpat-eeo1/>
- Energy Information Administration (EIA). (2005). Residential Energy Consumption Survey (RECS). Retrieved from <http://205.254.135.7/consumption/residential/>
- Energy Information Administration (EIA). (2009). California Quick Facts. Retrieved from <http://205.254.135.7/state/state-energy-profiles.cfm?sid=CA>
- Energy Information Administration (EIA). (2010). Petroleum Statistics. Retrieved from http://www.eia.gov/energyexplained/index.cfm?page=oil_home#tab2
- Energy Information Administration (EIA), Office of Oil and Gas. (2010). Trends in U.S. Residential Natural Gas Consumption. Retrieved from http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2010/ngtrendsresidcon/ngtrendsresidcon.pdf
- Energy Information Administration (EIA). (2011). International Energy Outlook (IEO) 2011. Retrieved from <http://www.eia.gov/forecasts/ieo/world.cfm>
- Energy Information Administration (EIA-A). (2012). Annual Energy Outlook 2012 Early Release Overview. Retrieved from [http://www.eia.gov/forecasts/aeo/er/pdf/0383er\(2012\).pdf](http://www.eia.gov/forecasts/aeo/er/pdf/0383er(2012).pdf)
- Energy Information Administration (EIA-B). (2012). Petroleum Supply Monthly. Retrieved from <http://www.eia.gov/petroleum/supply/monthly/>
- Department of Transportation (DOT), Federal Highway Administration (FHWA) (2011) Highway Statistics 2009. Retrieved from <http://www.fhwa.dot.gov/policyinformation/statistics/2009/>
- Higher Education Research Institute (HERI). (2010). Degrees of Success: Bachelor's Degree Completion Rates among Initial STEM Majors. Retrieved from <http://www.heri.ucla.edu/nih/downloads/2010%20-%20Hurtado,%20Eagan,%20Chang%20-%20Degrees%20of%20Success.pdf>
- International Energy Agency (IEA). (2011). CO2 Emissions from Fuel Combustion: Highlights. Retrieved from <http://www.iea.org/co2highlights/co2highlights.pdf>
- Nandakumar, J. (2007). Sino-Indian cooperation in the search for overseas petroleum resources: Prospects and implications for India. *International Journal of Energy Sector Management*, 1(1): 84 – 95.
- National Poverty Center (NPC). (2007). The New Face of the Low-Wage Workforce. Retrieved from http://www.npc.umich.edu/publications/policy_briefs/brief8/policy_brief8.pdf
- Natural Resources Defense Council. (2004). Environmental Health Threats in the Latino Community. Retrieved from http://www.nrdc.org/health/effects/latino/english/latino_en.pdf
- North Central Texas College. (2012). Oil and Gas Technology. Retrieved from <http://cms.nctc.edu/OilGasTechnology.aspx>
- Ortman, J. & Guarneri, C. (2009). United States Population Projections: 2000 to 2050. Retrieved from <http://www.census.gov/population/www/projections/analytical-document09.pdf>
- Pew Hispanic Center. (2004). Hispanic College Enrollment: Less Intensive and Less Heavily Subsidized. Retrieved from http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Fact_Sheets/Higher_education_performance/pew_hispanic_education_fact_sheet_college.pdf
- Pew Hispanic Center-A. (2011). Hispanic College Enrollment Spikes, Narrowing Gaps with Other Groups. Retrieved from <http://www.pewhispanic.org/files/2011/08/146.pdf>
- Pew Hispanic Center-B. (2011). Hispanics Account for More than Half of Nation's Growth in Past Decade. Retrieved from <http://www.pewhispanic.org/files/reports/140.pdf>
- Pew Research Center (2012). Labor Force Growth Slows, Hispanic Share Grows. Retrieved from <http://www.pewsocialtrends.org/2012/02/13/labor-force-growth-slows-hispanic-share-grows-2/>

- PricewaterhouseCoopers (PwC). (2011). The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy in 2009: Employment, Labor, Income, and Value Added. Retrieved from http://www.api.org/policy/americanatowork/upload/EconomicImpacts_of_Industry_on_US_Economy_in_2009.pdf
- Selig Center for Economic Growth. (2009). The Multicultural Economy 2009. The University of Georgia. Retrieved from <http://www.terry.uga.edu/selig/docs/GBEC0903q.pdf>
- ShaleNET. (2011). Linking Talent to Opportunity. Retrieved from http://www.shalenet.org/assets/ShaleNet_cutsheet_June2011.pdf

Endnotes

- 1 The terms “Latino” and “Hispanic” are used interchangeably in this paper.
- 2 Demographic herein referred to in the context of racial/ethnic demographics.
- 3 U.S. Department of Transportation’s definition of passenger vehicle is a car or truck, used for passengers, excluding buses or trains.
- 4 Amount of energy used to power passenger vehicles for any and all purposes including work, entertainment, etc.
- 5 Non-Hispanics are used in reference to the collective group of Blacks, Whites, Asian-Americans, etc. that do not identify as Hispanic/Latino.
- 6 Amount of energy used for powering, heating, and cooling a home.
- 7 Other fuels include propane fuel, heating oil, kerosene, and wood.
- 8 EIA Residential Energy Consumption Survey 2009 data expected to be released in early 2012, but not yet released at time of publishing.
- 9 The oil and gas industry is considered sectors including oil and gas extraction, petroleum refineries, gasoline stations, among others (PwC, 2009).
- 10 Wages in oil and natural gas industry are higher than average median wages (Department of Labor, 2012).