**BEFORE THE**

**FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 20230023-GU**

**IN RE: PETITION FOR RATE INCREASE**

**BY PEOPLES GAS SYSTEM, INC.**

**PREPARED DIRECT TESTIMONY AND EXHIBIT**

**OF**

**DR. RICHARD K. HARPER**

**ON BEHALF OF**

**PEOPLES GAS SYSTEM, INC.**

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**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**PREPARED DIRECT TESTIMONY**

**OF**

**DR. RICHARD K. HARPER**

**ON BEHALF OF PEOPLES GAS SYSTEM, INC.**

**EDUCATIONAL BACKGROUND AND EXPERIENCE**

**Q.** Please state your name, address, occupation and employer.

**A.** My name is Dr. Richard K. Harper, PhD. My business address is 516 E. Zaragoza St., Pensacola, FL 32502. I am self-employed.

**Q.** Please describe your duties and responsibilities in that position.

**A.** I conduct a variety of studies for public and private clients using the tools of economic analysis.

**Q.** Please provide a brief outline of your educational background and business experience.

**A.** My current curriculum vitae is included as Document No. 1 of my exhibit. I received a BA in Economics from Guilford College in 1978, and an MA in 1986 and a PhD in 1989, both in Economics from Duke University. I worked as a professional economist from 1980 – 1984 at Research Triangle Institute in Research Triangle Park, North Carolina, and at the University of West Florida (“UWF”) from 1989 until retiring in 2017.

From 1996 – 2011 (except during a sabbatical and other time away) I served as the Director of UWF’s Haas Center for Business Research and Economic Development, conducting numerous studies of the local, regional, and state economies and economic sectors. I then served as Executive Director of the UWF Office of Economic Development and Engagement, overseeing activities of the Haas Center and of the State Director’s Office of the Florida Small Business Development Center Network. I served as the Senior Policy Advisor for Economic Affairs for the Florida Senate from 2012 until 2014. I then returned to UWF as Assistant, then Associate, Vice President for Research and Economic Development and served as the University’s Chief Research Officer during 2015 and 2016.

I have offered expert economics testimony in litigation and served as the economic expert for the State of Florida from inception until completion in its economic damages litigation with BP. Since retiring from UWF in 2017, I have worked as a consultant in economics, performing a variety of studies of economic issues for public and private clients. I currently serve as the Economic Advisor to Triumph Gulf Coast, Inc. (“Triumph”), providing advice and support to the Triumph Board of Directors as it seeks to distribute $1.5 billion in Deepwater Horizon damages funds to projects that will grow and diversify the Northwest Florida economy.

**Q.** Have you provided testimony before the Florida Public Service Commission?

**A.** Yes. I have provided testimony supporting growth trends in Florida and the benefit of natural gas use in Florida from an economic perspective for Peoples Gas System, Inc., in the company’s 2020 base rate proceeding in Docket No. 20200051-GU.

**PURPOSE OF DIRECT TESTIMONY**

**Q.** What are the purposes of your prepared direct testimony in this proceeding?

**A.** My prepared direct testimony will comment on past and future growth trends in Florida, with emphasis on future strong growth in population and economic activity that will drive growth in natural gas demand as described in the prepared direct testimonies of Peoples Gas System, Inc.’s (“Peoples” or the “company”) witnesses Eric Fox and Timothy O’Connor. I will describe the recent trends in inflation and the impact on the company’s customers and cost of service. I have also been asked to comment on the benefit of natural gas use to the State of Florida and its citizens from an economic perspective. These benefits include the value for residential, commercial and industrial customers through economical energy prices that allow and promote additional job creation. They also include environmental benefits relative to traditional energy sources, such as coal and oil.

**Q.** Did you prepare any exhibits in support of your prepared direct testimony?

**A.** Yes. Exhibit No. RKH-1 was prepared under my direction and supervision. My exhibit consists of 20 documents, as follows:

Document No. 1 Curriculum Vitae of Dr. Richard K. Harper

Document No. 2 Endnotes for the Prepared Direct Testimony of Dr. Richard K. Harper

Document No. 3 Population Growth in Florida by Decade, 1970-2059

Document No. 4 Total Nonfarm Payrolls in Florida and the Nation

Document No. 5 Annual GDP Growth Rate, Florida and the Nation, 1988-2021

Document No. 6 All Transactions House Price Index, Florida and the U.S.

Document No. 7 Producer Price Index, Residential Construction Inputs

Document No. 8 Measures of Inflation

Document No. 9 Cumulative Increase in Household Costs for PGS Customers

Document No. 10 Cumulative Increase in Business Costs for PGS Customers

Document No. 11 Cumulative Increase in Relevant PGS Business Costs

Document No. 12 Typology for Homebuyer Net Migration Based on Metro Population Size

Document No. 13 Total Population Indexed to 2020- Charlotte, FL

Document No. 14 Total Population Indexed to 2020- Collier, FL

Document No. 15 Total Population Indexed to 2020- Duval, FL

Document No. 16 Total Population Indexed to 2020- Bay, FL

Document No. 17 Total Population Indexed to 2020- Broward, FL

Document No. 18 Total Population Indexed to 2020- Miami-Dade, FL

Document No. 19 Total Population Indexed to 2020- Lee, FL

Document No. 20 Total Population Indexed to 2020- Nassau, FL

**FLORIDA’S POPULATION GROWTH AND ECONOMIC GROWTH OVER TIME**

**Q.** What are the Florida growth trends that are relevant to natural gas service expansion and reliability projects?

**A.** Florida has historically seen population and economic growth rates much greater than those for the nation overall. Demographers note that Florida’s population growth rates have ranked among the top eight states in each of the ten decades since 1920, and in most decades ranked in the top four.[[1]](#endnote-2) In 1920, New York had a population of 10.38 million, while Florida had 0.97 million. Over the next ten decades, New York grew by 95 percent to reach a population of 20.2 million, while Florida grew by 2,124 percent over the same period to reach a population of 21.54 million in 2020.[[2]](#endnote-3)

Florida’s current population (in 2023) is approximately 22.3 million and is expected to swell to 24.14 million permanent residents by 2030, an increase over this period of 1.84 million people.[[3]](#endnote-4) The migration of people from places both domestic and international into Florida has had profound effects on the state’s population and on Florida’s economy.

Today, as a result of the 2020 Census, Florida has 28 representatives in the 118th Congress, while New York has 26, a share that is proportional to their current populations.[[4]](#endnote-5) Population forecasts suggest that Florida will continue to gain seats over time, and that New York will continue to lose them. This is the continuation of the long-term trend as Americans migrate from the Northeast and Midwest to the South. As late as 1953, the Florida delegation to the 435-person U.S. House of Representatives was 6 representatives, while the state of New York sent 45.[[5]](#endnote-6)

The U.S. Census released information in December 2022 showing that Florida was the fastest growing state in the nation, at 1.9 percent per year from July 2021 through July 2022. Net migration of 444,484, or 1,218 more people per day moving into Florida above and beyond those moving out of Florida, was the largest among the 50 states.[[6]](#endnote-7)

Forecasts for the coming years suggest that the U.S. will have grown by a total of 18.8 percent between 2020 and 2050. During that same period, Florida is expected to grow by 37.4 percent, almost double the country’s overall percentage increase, or by a total of almost 8.1 million new residents.[[7]](#endnote-8) If Florida were instead to grow over that period at the projected nationwide growth rate, the 8.1 million expected new residents would be reduced by 4.01 million. These large projected population changes will increase the number of households seeking natural gas service. Meeting the needs of these new households via natural gas affords additional benefits per Florida household.[[8]](#endnote-9)

**Q.** Haven’t Florida population growth rates been declining in recent decades?

**A.** Yes. Population growth for Florida over the four past decades and expected growth over the coming four decades can be seen in Document No. 3 of my exhibit. While growth in the most recent decade, at 2.7 million people, is not as large as the 3.2-million-person growth attained over the 1980 – 1990 period, it exceeds the growth of all states except Texas. Further, strong growth in the number of domestic and international tourists to the state has created additional demand for lodging, restaurants, retail establishments, and other tourism amenities that can be met efficiently via natural gas.

**Q.** Does economic activity growth at local, state and national levels mirror the respective population growth trends?

**A.** Economic growth trends closely resemble those of the population growth trends. The Florida economy in recent decades continues to grow at a substantially faster rate than the national economy. This is true even when considering the larger than national average impact to Florida of the Great Recession of 2007 to 2009. Using January 2000 employment as a base, the cumulative growth in nonfarm employment in Florida as of November 2022, at 37.7 percent, is more than twice as large as employment growth in the nation as a whole over the last twenty years. This is shown in Document No. 4 of my exhibit.

Florida’s faster growth is also reflected in higher growth than for the nation in gross domestic product (“GDP”). GDP is the most commonly reported measure of economic activity and represents the dollar value of production of goods and services during any particular quarter or year. It is reported quarterly by the U.S. Bureau of Economic Analysis for the nation and for individual states.

Over the most recent decade Florida’s GDP grew by a cumulative 75.3 percent, while that of the nation as a whole grew by 54.7 percent. This can be seen in Document No. 5 of my exhibit. But for the effects of the Great Recession of 2007 - 2009, that growth differential would likely have been even greater. Florida suffered particularly during this housing-driven recession because Florida’s construction sector is about 25 percent larger than the national average. This is due to the need to accommodate both the high rates of inbound migration of people from other states and other countries as well as to accommodate the strong demand for vacation housing.

**Q.** Is the damage inflicted on growth and the housing market by the Great Recession now over?

**A.** Yes. Housing prices have substantially recovered in Florida and returned to the long-run housing price trends, and now exceed the peak reached during the “housing bubble” before the Great Recession. Setting the January 2000 price of a home at $100,000, the average price nationally had risen to $270,900, while it had risen to $382,400 in Florida. This can be seen in Document No. 6 of my exhibit.

Current supply side constraints in housing, including limited availability of housing inventory as well as increased building input prices, such as lumber and labor, have been primary drivers of price increase seen in the 2021 – 2022 price run-up. A chart of this cost inflation in housing is presented in Document No. 7 of my exhibit. As can be seen, in February 2023, the price index for residential construction inputs had only begun to decline from its highs of mid-2022 and is still 49 percent higher than in January 2015.

**RECENT TRENDS IN INFLATION**

**Q.** Please describe recent trends in inflation and how they will likely change over time.

**A.** Inflation is defined to be the change in prices of goods and services in the economy. The most commonly reported measure of inflation is the Consumer Price Index for All Urban Consumers: All Items, generally referred to as the (“CPI”). The CPI is reported every month by the U.S. Bureau of Labor Statistics. It is a price index of a basket of goods and services paid by urban consumers representing roughly 88 percent of the total population. Prices are collected monthly from about 4,000 housing units and 26,000 retail establishments across 87 urban areas.[[9]](#endnote-10) The path of CPI inflation over the past decade shows a peak in mid-2022 at almost nine percent before beginning to fall throughout the second half of the year, as is shown in Document No. 8 of my exhibit.

Among the measures of inflation, one that is often referred to in policy discussions by the Federal Reserve (the “Fed”) is the Personal Consumption Expenditure Price Index (the “PCE Index”). The PCE Index captures inflation or deflation across a wide range of consumer expenses while also reflecting changes in consumer behavior. For example, if the price of beef rises, consumers may buy less beef and more chicken. Such behavioral changes are not captured in the CPI, which assumes a constant weight for each of the many items in the index.[[10]](#endnote-11) The recent path of the CPE Index is also shown in Document No. 8 of my exhibit.

For both the CPI and the PCE Indexes, versions which exclude food and energy prices are published, and are referred to as “core inflation.” This “core” distinction is important because it is thought that the Fed’s interest rate policy-setting tools will have little effect on food prices and on energy prices. Food prices may be heavily influenced by weather conditions and other factors (e.g., avian flu may influence the price of eggs) that are outside the control of the Fed, while energy prices may be heavily influenced by global geopolitical conditions and other factors (e.g., the Russian invasion of Ukraine) that are also outside the control of the Fed. The core PCE is also shown in Document No. 8 of my exhibit.

The mandate of the Fed is to ensure price stability and full employment. The Fed’s price stability target is an inflation rate at about two percent.[[11]](#endnote-12) As can be seen in Document No. 8 of my exhibit, inflation rates over the past decade have fluctuated slightly above or below two percent until Quarter two of 2021, at which time inflation accelerated to a rate not seen in the U.S. since the 1970s and 1980s.

Current market expectations are for economic growth rates across the nation to slow, perhaps leading to recession in late 2023 or in 2024. Timing estimates derived from bond markets and Fed estimates suggest that a return to the two percent rate of inflation will be attained, but is unlikely to be achieved before 2024.

**Q.** What has been the rate of inflation to the company’s residential and commercial customers?

**A.** The increase in average monthly bills for gas services has been substantially below overall rates of price increase of other commonly purchased goods and services used by households and businesses. This can be seen in the charts attached in Documents No. 9 and 10 of my exhibit.

**Q.** What is the impact of higher inflation rates on the ability of utility service providers to deliver their services?

The prices of the inputs used in system expansion, operations, and maintenance have increased, and these price increases cannot be absorbed without provision for the revenue increases needed to finance them. As can be seen in Document No. 11 of my exhibit, the price of key inputs of the type used by the company in supplying services has increased at a faster rate than has company revenue.

**Q.** Will this need for higher revenues to cover costs persist?

**A.** Yes, although the rate of inflation is expected to abate and return to the Fed’s target two percent rate, it is almost a certainty that the prices of key inputs, including both labor and materials, will not fall back to their previous price levels. Instead, the new higher price levels would simply come to reflect a lower rate of price growth (i.e., inflation will return to its normal two percent rate).

**Q.** Will the trend of higher growth in Florida than in the nation overall continue over the longer term or does it just reflect the recovery from the Great Recession that hit Florida harder than the rest of the nation?

**A.** Yes, this trend will continue. Population growth rates reflect ongoing demographic trends, with the peak birth years from the “Baby Boom” (1946 – 64 birth years) giving way to subsequent lower birth rates. Generation X (1965 – 79) was followed by the millennials (1980 – 1994) who have become the largest population group in the nation as the baby-boomer generation ages. However, Florida still expects 8.1 million new residents between 2020 and 2050. Slower national growth rates notwithstanding, since the time of the Great Recession, Florida population growth has substantially exceeded the national population growth rate, with Florida growing almost twice as fast - a cumulative 20.4 percent versus 10.6 percent for the nation over the 2008 – 2023 period.[[12]](#endnote-13)

**Q.** Why will Florida continue to be a top destination for people moving from other states?

**A.** Florida’s high population growth trends appear to likely continue into the future. Some of the primary drivers of relocation decisions by those who come from other states into Florida are longstanding, and include job opportunities, desire for a warmer climate, year-round outdoor activities, and an affordable lifestyle.

Since the passage and implementation of the 2017 Tax Cuts and Jobs Act, there is also a change in the relative cost of living driven by the attractiveness of Florida’s tax structure. Because of Florida’s lack of a state income tax, its relatively modest property tax burden, and its modest level of state expenditures per state resident, Florida’s attraction for inbound migration from other states continues to be strong. However, the recent several year run-up in house prices, combined with property insurance challenges exacerbated by Hurricane Ian, are now posing challenges to Florida’s traditional housing affordability advantage. While this will serve to moderate Florida’s recent inbound migration surge, Florida population growth will continue to exceed the national average rate.

Even though national population growth rates are falling due to the demographics of the post-war generations, the cumulative growth in the number of residents of Florida means that a somewhat slower rate of growth will still attract close to the same number of new households as had been seen during previous decades.

**Q.** Will the Coronavirus have any significant negative long-term effects on the growth trends you have just described?

**A.** No. The Coronavirus has negatively affected economic growth in Florida and throughout the country in a way that we have never seen before; however, the data now document an acceleration in the growth differential in favor of Florida. This was driven in the short term by the strong recovery in leisure and hospitality sector as Florida was open for business when other states were not. Strong demand for housing created by record numbers of new residents also contributed to that growth.

**Q.** Have there been other likely effects of the Coronavirus on natural gas markets in Florida?

**A.** Yes, there have been other effects. The pandemic has intensified an existing trend towards migration away from cities with the highest population density. People have voted with their feet, leaving New York and other densely populated top 25 urban areas and they have come to Florida. This can be seen in Document No. 12 which presents 2022 migration data from Freddie Mac, (the Federal Home Loan Mortgage Corporation, which buys home loans from issuers). Because it has information on both the origin and destination of families with new mortgages, it can provide more up to date information than is available from the U.S. Census Bureau.

Further, an effect of the pandemic has been to increase at-home activities, including working, dining, shopping, and entertainment, relative to historical patterns. While some of this is transitory, evidence suggests that these activities are likely here to stay. This would naturally increase consumer demand for increased amenities in the home. Additionally, the pandemic exposed fragility in supply chains of intermediate and final products from toilet paper to milk to meat, to automobiles and steel. Consumers may wish, for purposes of risk diversification and redundancy of key home attributes, to have access to natural gas, whether for emergency home electricity generators or simply for the convenience and amenity value of hot water and cooking even when the electricity is out. In this way, increased availability of natural gas distribution systems will be a benefit to purchasers of new and existing homes.

**BENEFITS TO FLORIDA OF GROWTH IN UTILIZATION OF NATURAL GAS**

**Q.** What are the benefits to further growth in the use of natural gas in Florida?

**A.** The benefits of natural gas relative to other energy sources are well-understood. Among the most important is the multi-year and ongoing trend for affordability relative to alternate fuel sources.[[13]](#endnote-14) Another is the decrease in greenhouse gas emissions relative to other fossil-fuel resources, and the concomitant decrease in noxious pollutant emissions.[[14]](#endnote-15) These have led to quantifiable decreases in morbidity and mortality and associated increases in economic output across the nation.[[15]](#endnote-16)

In Florida, the switch to natural gas over time has been more rapid than in most states and our state has already benefitted substantially from increased use of natural gas to meet energy needs in the home, in businesses, and in electricity generation. Across key industries, from electricity generation to construction, health care, food service, transportation, HVAC, and other applications, natural gas has provided reliable, inexpensive, and environmentally friendly energy to power Florida’s economic growth.

According to recent data from the EIA, in Florida, about 86.7 percent of natural gas use (measured by BTU) in the first 10 months of 2022 was in electricity generation, with 7.8 percent industrial use, 3.9 percent in the commercial sector, about 0.3 percent in transportation, and 1.2 percent in the residential sector.[[16]](#endnote-17) This share of usage in electricity generation is higher than for any other large state in the nation.[[17]](#endnote-18) It is indicative of Florida’s warm climate, its large share of leisure and hospitality businesses, retail establishments, and service sector activity, and low share of industrial activity. It is also indicative of the transition that Florida has made over time away from traditional fossil fuels of coal and oil into cleaner burning natural gas.

**Q.** Will the growth of renewable energy resources impact growth trends for natural gas usage in Florida?

**A.** No. While the share of renewables in power generation is growing, natural gas is economic even as renewables usage increases, and natural gas will play a significant role in energy solutions to customers. Renewables have not solved the problems of morning and evening demand peaks in the daily load (the “duck curve”), and mandated use of renewables would drive energy prices to levels likely to be unacceptable to Florida consumers and voters. Even in the future, the affordable cost, rapid dispatch, and backup capabilities of natural gas mean it will be an essential part of any set of sustainable energy policies.

**ECONOMIC AND DEMOGRAPHIC FORECASTS FOR PEOPLES’ LOCATIONS**

**Q.** Have you prepared specific demographic and economic forecasts for the geographic locations served by Peoples?

**A.** Yes, economic and demographic descriptors for each of the counties that are served by Peoples can be seen in the county-specific chart packages in Documents No. 13 through 20 of my exhibit.

**Q.** What are your conclusions in respect to these areas?

**A.** Florida Population growth is expected to exceed the national average rate of growth. This means that there will be an increase in demand for natural gas. Florida’s long-held advantage over other states in providing an environment where people want to live will continue. This advantage may be increasing over time in terms of economics as the tax penalty to households of staying up North was increased by the 2017 changes to the federal tax code, the pandemic driven changes, and the changing political environment.

The projects in which Peoples’ has invested and will continue to invest in are representative of the diversity of the state insofar as they meet the needs of some of the counties with fastest residential housing growth, areas with the greatest planned industrial growth, and areas that will be expected to accommodate a greater share of Florida’s future growth.

**SUMMARY**

**Q.** Please summarize your prepared direct testimony.

**A.** The system growth presented by Peoples’ in this matter is supported by the increased demand that has occurred and will continue to occur as it is driven by population growth and economic activity growth in the State. Use of low-priced American natural gas to meet the energy needs of these new households and businesses will allow Florida citizens to enjoy greater purchasing power by spending less of their incomes on energy. This new spending will ripple far beyond the energy sector, allowing new employment and income to be spread broadly across the Florida economy.

**Q.** Does this conclude your prepared direct testimony?

**A.** Yes.

# EXHIBIT

**OF**

**DR. RICHARD K. HARPER**

**ON BEHALF OF PEOPLES GAS SYSTEM, INC.**

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**Endnotes**

1. United States Census Bureau. “Historical Population Change Data (1910 – 2020), https://www.census.gov/data/tables/time-series/dec/popchange-data-text.html [↑](#endnote-ref-2)
2. United States Census Bureau. “Historical Population Change Data (1910 – 2020), https://www.census.gov/data/tables/time-series/dec/popchange-data-text.html [↑](#endnote-ref-3)
3. Woods & Poole Economics. Complete Economic and Demographic Data Source (CEDDS), Florida Profile, 2022. [↑](#endnote-ref-4)
4. https://www.house.gov/representatives [↑](#endnote-ref-5)
5. https://history.house.gov/Congressional-Overview/Profiles/82nd/ [↑](#endnote-ref-6)
6. https://www.census.gov/newsroom/press-releases/2022/2022-population-estimates.html [↑](#endnote-ref-7)
7. Woods & Poole Economics. Complete Economic and Demographic Data Source (CEDDS), Florida Profile, 2022. [↑](#endnote-ref-8)
8. See, e.g., Harper, R. “The Economic Impact of Natural Gas in Florida,” prepared for the Florida Natural Gas Association, October 2020. These benefits include lower consumer prices and health benefits. [↑](#endnote-ref-9)
9. The prices that are monitored include food, clothing, shelter, fuels, service fees, and sales taxes. See, e.g., <https://www.bls.gov/cpi/>. [↑](#endnote-ref-10)
10. A more detailed explanation of the CPE Index can be found at <https://www.bea.gov/data/personal-consumption-expenditures-price-index>. [↑](#endnote-ref-11)
11. A discussion of the Federal Open Market Committee’s maximum employment, stable prices, and moderate long-term interest rate goals, and an inflation rate that averages 2 percent over time, can be found at: <https://www.federalreserve.gov/monetarypolicy/files/fomc_longerrungoals.pdf> [↑](#endnote-ref-12)
12. Woods & Poole Economics. Complete Economic and Demographic Data Source (CEDDS), Florida Profile, 2022. [↑](#endnote-ref-13)
13. The February 2023 Short Term Energy Outlook from the Energy Information Administration (“EIA”) forecast shows natural gas prices declining to pre-Russian / Ukraine war levels. EIA forecast the natural gas price at the Henry Hub will average $3.40/MMBtu in 2023. <https://www.eia.gov/todayinenergy/detail.php?id=55539> [↑](#endnote-ref-14)
14. See, e.g., Harper, R. “The Economic Impact of Natural Gas in Florida,” prepared for the Florida Natural Gas Association, October 2020. [↑](#endnote-ref-15)
15. Stephen Holland, et al. “Decompositions and Policy Consequences of an Extraordinary Decline in Air Pollution from Electricity Generation,” NBER Working Paper 25339, December 2018. More specifically, for generation plants in 2017 versus 2010, some $31bn in reductions were achieved by retiring coal plants, $32bn from reduced emissions from existing coal plants (due to lower usage rates), and $5.3bn from switching existing coal-fired plants to gas. While the total contribution of gas to pollution increased $6.8bn due to greater usage due to new capacity, this was offset by reducing about 10 times as much pollution from coal-fired plants. [↑](#endnote-ref-16)
16. The Florida Natural Gas Summary is available at <https://www.eia.gov/dnav/ng/ng_sum_lsum_dcu_sFL_m.htm> [↑](#endnote-ref-17)
17. The U.S. Nuclear Energy Institute reports that in 2021, only Delaware, Massachusetts, and Rhode Island had a higher share of net electricity generated within their borders than Florida. <https://www.nei.org/resources/statistics/state-electricity-generation-fuel-shares> [↑](#endnote-ref-18)