Elizabeth Johnston

Director, Public Policy

ICF

Elizabeth Johnston is a certified Project Management Professional (PMP) with over 15 years of experience managing and conducting economic and policy analysis for federal, state and local clients. Ms. Johnston has a specialty in economic impact assessment related to energy policy and infrastructure development. In the past few years she has supported application evaluation and broader economic analysis for offshore and onshore wind and solar development in Massachusetts, Oklahoma and New York. She regularly uses a variety of economic impact models, calculators and data, including the REMI model, the IMPLAN model, EMSI, and BEA's RIMS II multipliers. Ms. Johnston is also an experienced facilitator who has been responsible for mobilizing regional stakeholders through work sessions that result in stakeholder-driven strategic plans for policy implementation. Most recently she has led outreach efforts related to analyzing fugitive methane leaks across California's commercial building stock and supporting solar energy financing in Massachusetts.

Years of Experience

- Professional start date: 2002
- ICF start date: 2005

Education

- Master of City and Regional Planning, Economic Development, University of California, Berkeley, 2006
- Bachelor of Arts, Geography, Middlebury College, 2002

Certifications/Other

- Project Management Professional, Project Management Institute, 2008, 2011, 2014. 2017.

Project Experience

Assessment of Fugitive Methane Emissions from the Natural Gas System, California Energy Commission, 2017–Current. Ms. Johnston is current managing an effort for the California Energy Commission (CEC) to analyze the volume of fugitive methane emissions from commercial buildings across the state. First, ICF developed the methodology to statistically characterize commercial buildings, identify the sample of specific buildings for the survey and eventually extrapolate the survey findings to represent the population of all commercial buildings in California. Next, ICF will conduct a pilot study of methane emissions to establish the variability of emissions across various types of commercial buildings and determine the stratification of sampling and corresponding sample size. Lastly, ICF will conduct a full survey ad site assessment and extrapolate the results to the entire population of commercial buildings.

Incorporating Economic Factors into Waste Reduction Model (WARM), EPA ORCR, 2018-Current. Ms. Johnston led the team of economists on an effort to incorporate economic impact estimation capabilities into ORCR's Waste Reduction Model (WARM). ICF analyzed secondary sources to determine economic multipliers that allows WARM users to estimate the employment, wage, and tax impacts of different materials management practices for various waste materials**.**

Energy Diversity Contract Support: 83C Offshore-Wind Procurement, DOER, 2018. ICF provided expert support to DOER's review of competitive RFPs to fulfill the 83C Off-shore Wind procurement. Ms. Johnston supported the refinement of scoring criteria for the qualitative bid evaluation elements, participated in the threshold review and Stage 2 qualitative reviews on a range of review topics including; bidder experience, community relations, accessibility of technology, site status, environmental impacts and economic benefits.

NY Firms GHG Accounting, NYSERDA, 2018. Ms. Johnston managed a project to identify and characterize the greenhouse gas footprint of large firms in New York State. The team compiled available data on company emissions in NY using data from the EPA GHGRP, the Carbon Disclosure Project, and the NYC Carbon Challenge Progress Report and leveraged ICF's proprietary corporate GHG tool to estimate emissions for non-reporting firms and manufactures using data from the EIA's CBECS and MECS database.

Economic Impact Analysis of the Green Jobs Green New York (GJGNY) Program, New York State Energy Research and Development Authority (NYSERDA), 2013, 2016. Ms. Johnston managed an update to the 2013 economic impact analysis of NYSERDA's GJGNY program, which was also completed under her management. Using the IMPLAN model, ICF assessed the secondary impacts associated with the program's

employment. The team also assessed the economy-wide impact of the wage premium associated with GJGNY-funded positions compared to similar occupations in the broader economy.

Transportation Engineering Approaches to Climate Resilience (TEACR), Federal Highway Administration (FHWA), 2016-2017. Ms. Johnston is leading a team of economists to conduct benefit-cost analyses and economic impact modeling as part of a larger effort to identify best practices for transportation practitioners to account for climate change when designing transportation assets. The economic analyses have involved the design and analysis of several case studies, including an assessment of the economic impacts of bridge-access disruption, costs associated with alternative culvert design and impacts due roadway access disruption in remote locations.

Technical Assistance in Support of the Global Warming Solutions Act, Massachusetts Department of Environmental Protection, 2017. Ms. Johnston managed a team of economists and policy analysts to provide technical assistance to MassDEP in support of the Global Warming Solutions Act regulations. For this project, Ms. Johnston oversees the work of the two onsite staff members and provided guidance on data analysis, public comment summaries, and stakeholder support.

Economic Impacts of Natural Gas Trucks Fueled by Renewable Natural Gas, Southern California Gas Company, 2017. Ms. Johnston led the team of economists to evaluate the economic impacts in California of deploying natural gas trucks equipped with low NOx-emitting engines that are fueled by renewable natural gas. The analysis assessed the impacts of deploying a) natural gas trucks in the goods movement sector and the fueling infrastructure required to support these trucks, and b) RNG produced in California and injected into the common carrier pipeline from sources such as landfills, wastewater treatment plants, and livestock operations. The economic assessment included a consideration of labor impacts, output, and value added to California's statewide economy.

Solar Market Barriers Analysis, Massachusetts Clean Energy Center, 2016. Ms. Johnston served as the Deputy Project Manager and Task Lead for the stakeholder outreach and workshop implementation. Her team designed and implemented four separate surveys, tailed to different sub-market groups and then facilitated three stakeholder forums to collaboratively discuss the results of survey and solicit additional input. Lastly, Ms. Johnston conducted a dozen follow-up interviews with key stakeholders to confirm the high-level findings.

Economic Impact of DOE's Mission Innovation Investments, Pew Charitable Trusts, 2016. Ms. Johnston managed the effort to characterize and model the economic impacts associated with the Department of Energy's Mission Innovation budget. The team characterized the innovation activities, constructed IMPLAN model inputs and then analyzed the model outputs to describe the industry-specific impacts of DOE investment in renewable energy program R&D.

The Impact of Solar Powered Oil Production on California's Economy, 2015. Ms. Johnston led the economic impact analysis task, using the IMPLAN model, to calculate the impacts of deploying solar steam generation and solar electric power generation technologies to support oil production in California. ICF developed and analyzed two development scenarios for each technology. In addition to assessing the impact of the solar activity, the team also assessed the impacts of keeping LCFS credits generated in California, rather than in other regions, as well as the impacts on refiners as a result of being able to maintain margins that would have otherwise been impacted by reduced crude runs or reduced margins from having to export the refined products.

Economic Impact of Recovery Act Investments in Smart Grid, U.S. Department of Energy, 2013. Ms. Johnston was the modeling task lead on a study to analyze the economy-wide impacts of the American Recovery and Reinvestment Act of 2009 funding for Smart Grid project deployment in the United States. Ms. Johnston used the IMPLAN model to assess the impacts of the nearly $3 billion in investments made through DOE's Smart Grid Investment Grants (SGIG) and the Smart Grid Demonstration Program (SGDP) from August 2009 to March 2012.

Solar Financing Education and Outreach, Massachusetts Department of Energy Resources (DOER), 2013. Ms. Johnston managed an effort to provide education to the MA financial community to encourage solar lending. The project began with a survey to solicit feedback from community banks across the Commonwealth about their level of familiarity and concerns with financing solar PV projects. Based on feedback from the

interviews, ICF designed educational material and co-hosted (with DOER) three workshops to engage the financial community.

Energy Efficiency Demand Side Management Program Impact Analysis, Union Gas, 2013. Ms. Johnston managed the modeling team to analyze the direct and indirect impact of Union Gas's DSM program. The analysis included both a historic analysis using program costs data and energy savings as well as projections for future years based on expected programming. The modeling team designed and custom-built an excel-based impact model using the Canadian I-O multipliers and program input data provided by Union Gas.

Atlantic Region Wind Energy Development: Recreation and Tourism Economic Baseline Development, Bureau of Ocean Energy Management (BOEM), 2012. Ms. Johnston was the deputy project manager on a project for BOEM to assess the sensitivity of recreation and tourism in communities along the Atlantic coast to off-shore wind development. Ms. Johnston provided day-to-day project management and analytic input to all of the tasks, which included a survey of relevant studies from the United State and abroad of the actual and perceived impacts to tourism and recreation of offshore wind development, a scorecard analysis to determine which communities are most sensitive to offshore wind development and the development of narrative profiles for each of the 70 selected locations.

U.S. Freight Emissions Segmented by Industry, Environmental Defense Fund, 2012. Ms. Johnston provided technical oversight for the economic analysis for this project to estimate GHG emissions associated with freight transportation. The analysis relied on commodity flow data from the Freight Analysis Framework, the Foreign Trade Statistics, the BTS T-100 Domestic and International Air Carrier data, the North America Transborder Freight data and other data sources to characterize freight movements. The U.S. Input-Output Tables from the BEA were used to estimate inter-industry freight purchases. The project helped EDF to identify opportunities to work with industry on climate change issues – for the Environmental Defense Fund.

Economic Impact Assessment of NPGA Propane Auto Gas Tax Credit: Fiscal Impact, National Propane Gas Association, 2011. Ms. Johnston was the lead analyst for the fiscal assessment of extending the propane autogas tax credits on the US economy. For this project, Ms. Johnston estimated the costs and benefits of a five-year extension of the current propane vehicle and infrastructure tax credits. She used the IMPLAN model to analyze the employment and other economic impacts associated with the additional market penetration of propane vehicles attributable to the tax credits as well as the benefits associated with the propane fuel price reduction from the fuel excise tax credit.

Regional Greenhouse Gas Forecast and Reduction Measure Analysis: Job Analysis Task, Sacramento Metropolitan Utility District, 2011. Ms. Johnston was the lead analyst on the jobs analysis for the GHG reduction measure study for Sacramento County. The work involved analysis and prioritization of various GHG reduction measures as well as an economic/financial analysis of the measures to determine which provided the most promising fiscal and/or job creation potential. Ms. Johnston used publicly available calculators and multipliers that have been customized to the renewable energy and energy efficiency sectors as well as other "rule-of-thumb" estimates to examine the expected fiscal and job impacts.

U.S. Department of Labor Employment and Training Administration Labor Market Information Improvement Grant: Mid-Atlantic Regional Collaborative (MARC) Green Consortium, 2010-2011. Ms. Johnston was a Task Lead on a multi-task effort to 1) develop and implement a regional public and private employer survey; 2) analyze labor market information (LMI) data, and, 3) conduct economic impact analysis. Ms. Johnston was a key analyst of the survey results and managed a task to assess the economy-wide impacts associated with green activity in the region. For this task, she customized the IMPLAN model to account for the unique characteristics of green labor market, including a 'green' wage premium.

Employment History

ICF International. Associate, Sr. Associate, Manager, Sr. Manager, Director – Public Policy. 2005 – Present.

Urbitran Associates. Planner. 2002–2004.