
**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION
BY SCS CARBON TRANSPORT LLC FOR
A PERMIT TO CONSTRUCT A CARBON
DIOXIDE TRANSMISSION PIPELINE**

HP22-001

**SILVIA SECCHI
INITIAL PRE-FILED TESTIMONY
IN SUPPORT OF
LANDOWNER INTERVENORS**

Q: Please state your name and purpose for providing testimony in these proceedings.

A: My name is Silvia Secchi. The purpose of my testimony is to provide the PUC information helpful when considering Summit’s claims of economic impacts. I have researched prior claims by other similarly situated companies and there is a history of the claims being different from reality. While the promoters of these projects tend to argue that any incremental economic “benefit” in terms of one new tax dollar or one new, albeit typically temporary, job is enough to be entitled to approval, I encourage thoughtful analysis around the net impacts looking project wide and consider the negative economic effects as well.

Q: What experience, education, training, or background qualify you to provide opinions and your concerns as you have herein?

A: Please see a summary of my education and experience in Attachment No. 1.

Q: Does Attachment No. 2 to this testimony describe your opinions and concerns that you want the PUC to be aware of relative to the proposed CO2 pipeline in question?

A: Yes, that is a true and accurate copy of an article I authored discussing the claimed economic benefits of such CO2 pipelines and the reality based on historical research. I stand by my positions and opinions discussed therein and am competent

to testify about them as necessary. I urge the PUC to carefully consider this testimony during the Hearing in this matter and in your deliberations. I further reserve the right to amend or modify these opinions upon presentation of any additional information that may justify such a change.

Q: Does Attachment No. 3 to this testimony describe additional opinions and concerns that you want the PUC to be aware of relative to the proposed CO2 pipeline in question?

A: Yes, that is a true and accurate copy of an article I authored published in the Des Moines Register discussing exaggerated economic benefits of such CO2 pipelines. I stand by these opinions and am competent to testify about them.

/s/ Silvia Secchi

Silvia Secchi

Geographical and Sustainability Sciences

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Research Interests:

Environmental impacts of agriculture, Water sustainability. Floodplain policy, Conservation policy, Adaptation and mitigation to climate change, Land use science, Integrated modeling

Academic experience:

2017-current	University of Iowa	Iowa City, IA
Associate Professor	Department of Geographical and Sustainability Sciences	Public Policy Center
2014-2017	Southern Illinois University	Carbondale, IL
Associate Professor	Department of Geography and Environmental Resources	
2008-2014	Southern Illinois University	Carbondale, IL
Assistant Professor	Department of Agribusiness Economics	

2004-2008 Associate Scientist	Iowa State University Center for Agricultural and Rural Development	Ames, IA, USA
2001-2004 Assistant Scientist	Iowa State University Center for Agricultural and Rural Development	Ames, IA, USA
1996 – 2000 Research Assistant	Iowa State University Center for Agricultural and Rural Development	Ames, IA, USA
1995 - 1996 Research Associate	University of Reading Centre for Agricultural Strategy	Reading, England

Google Scholar: <https://scholar.google.com/citations?user=rXte6MIAAAAJ&hl=en&oi=ao>

ORCID: <http://orcid.org/0000-0003-0095-0789>

Broadly speaking, I am interested in the nexus between humans and the environment, the tools and methodologies we use to understand it, the policies we adopt to change it, and the pedagogy of teaching it.

Specifically, most of my work focuses on the Mississippi River Basin – I have done research on land based energy production, water quality, adaptation to climate change, floodplain management, invasive species and farmers’ attitudes in the watershed. I believe in place-based education. Studying multiple aspects of the complex relationship between humans and the Great River has given me a very rich lens through which to learn, research and teach a system approach to address environmental problems.

I am trained as a natural resource economist, and I identify as an economist, a geographer and a transdisciplinary scholar. My research typically involves many collaborators from other disciplines, and it integrates economic, geographical, and environmental models.

Courses:

Contemporary Environmental Issues
Environmental Economics and Policy
Geography, People and the Environment

Environmental Decision Making

Interdisciplinary Approaches to Environmental Issues

Graduate Advisees:

Shanna McClain (with C. Bruch) – Ph.D. in Environmental Resources & Policy, SIUC (IGERT fellow), 2016. AAAS fellow

Mukesh Bhattarai – Ph.D. in Environmental Resources & Policy, SIUC, 2016. Independent consultant

Awoke Teshager (with J. Schoof) – Ph.D. in Environmental Resources & Policy, SIUC, 2016 Postdoctoral Research fellow at the Graham Sustainability Institute, University of Michigan

Tom Shaw – Ph.D. in Environmental Resources & Policy, SIUC, 2015, Director of Environmental Services at Big Rivers Electric Corporation

Sarah Varble – Ph.D. in Environmental Resources & Policy, SIUC, 2014. New Products Manager, Fall Creek Farm & Nursery, Inc.

Grants & Funding:

USDA NIFA – Costs of continuous conservation tillage: estimation with incomplete data (with L. Kurkalova, T. Wade and R. Claassen), 2016-2018, \$499,995.

Argonne National Lab (DoE funds) – Landscape by Design – Valuation of Ecosystem Services, 2015-2017, \$49,736.

National Science Foundation - DYN COUPLED NATURAL-HUMAN. People, Water, and Climate: Adaptation and Resilience in Agricultural Watersheds (with D. Bennett, N. Basu, M. Muste, W. Gutowski) 2011-2017, \$1,011,832.

Illinois DNR – Training, Certification, Pilot Incentive, Marketing, And Removal Research Project for the long-term strategy in reducing and controlling Asian Carp populations (with J. Garvey), 2011, \$1,500,000.

National Science Foundation - DYN COUPLED NATURAL-HUMAN. Climate Change, Hydrology, and Landscapes of America's Heartland: A Multi-scale Natural-Human System (With C. Lant, S. Kraft, G. Misma, J. Nicklow, and J. Schoof) 2010-2014, \$1,430,000.

USDA CSREES AFRI Agribusiness Markets and Trade. An Analysis of the Impact of Biofuel Expansion through Linking of Agricultural and Energy Markets (With A. Elobeid and L. Kurkalova) 2010-2014, \$360,396.

The Nature Conservancy. Floodplain Restoration Strategies Integrating Biomass plantings and Ecosystem Service Payments (With S. Kraft) 2009-2013, \$112,536.

National Science Foundation Cyber-Enabled Discovery and Innovation Type II. Understanding Water-Human Dynamics with Intelligent Digital Watersheds. (with J. Schnoor, M. Muste, A. Kusiak and D. Bennett). 2009-2012, \$899,391.

EPA, Region 7. Biofuel Feedstock Landscape Coverage for Five Biofuel Industry Scenarios (with R. Cruse, A. Elobeid and S. Tokgoz) 2008-2010, \$150,000.

Department of Energy-USDA. Expansion of ethanol production: evaluation of costs and benefits to rural communities in the Upper Mississippi River Basin. (with L. Kurkalova, C.L. Kling, P.W. Gassman, M. Jha, A. Carriquiry and D. Otto) 2006-2009, \$676,722.

USDA Natural Resources Conservation Service. Environmental Credit Trading Handbook. 2006-2007 (with C.L. Kling), \$84,150.

Prairie Rivers of Iowa R.C. & D and USDA Natural Resources Conservation Service. Rapid Watershed Assessment for the Boone River, the Upper Iowa and the South Skunk Watersheds (with T. Isenhardt, C.L. Kling, P.W. Gassman and M. Tomer) 2006-2007, \$72,500.

NASA and USDA Cooperative State Research, Education, and Extension Service. Interactive Drivers of Land Use/Land Cover Change in Agricultural Areas: Climate and Land Manager Choices. (with C.L. Kling, H. Feng, P.W. Gassman, and E. Tackle) 2006-2008, \$465,900.

Iowa Farm Bureau, Leopold Center for Sustainable Development, Iowa Soybean Association, Iowa Corn Growers Association. Assessment of Conservation Practices on Agricultural Cropland in Iowa (with C.L. Kling, H. Feng, P. Gassman, and M. Jha) 2006, \$72,500.

USDA CSREES Integrated Projects. Water Resource Degradation in the Boone Watershed: Integrating Stakeholder Knowledge and Preferences

with Economic and Watershed Models (with C.L. Kling, M. Duffy, L. Kurkalova, H. Feng, P.W. Gassman, and J. Cooper) 2005-2008, \$590,000.

Prairie Rivers of Iowa R.C. & D and Leopold Center for Sustainable Development. Boone River Watershed and Gordon's Marsh Project (with C.L. Kling, and P.W. Gassman) 2005-2006, \$35,000.

Iowa State Water Resources Research Institute. Improving Water Quality in Iowa Rivers: Cost-Benefit Analysis of Adopting New Conservation Practices and Changing Agricultural Land Use (with C.L. Kling, H. Feng, P.W. Gassman, and L. Kurkalova) 2005-2006, \$39,600

National Science Foundation. Biocomplexity of Integrated Perennial-Annual Agroecosystems (Senior Personnel. Principal Investigators: H. Asbjornsen, R. M. Cruse, C.L. Kling, M. Z. Liebman, J. D. Opsomer) 2005-2007, \$ 99,998.

Iowa Department of Natural Resources. Costs of Adopting Conservation Practices on Agricultural Cropland in Iowa and Possible Nutrient Standards (with C.L. Kling, H. Feng, P. Gassman, and L. Kurkalova) 2004, \$53,360.

Selected Publications:

(Asterisks denote graduate students advisees)

Teshager, A. D.*, Gassman, P. W., Secchi, S., & Schoof, J. T. (2017). Simulation of targeted pollutant-mitigation-strategies to reduce nitrate and sediment hotspots in agricultural watershed. *Science of The Total Environment*, 607(Supplement C), 1188-1200. doi:<https://doi.org/10.1016/j.scitotenv.2017.07.048>

Bhattarai, M.D.*, Secchi, S., & Schoof, J. (2017). Projecting corn and soybeans yields under climate change in a Corn Belt watershed. *Agricultural Systems*, 152, 90-99. doi: <http://dx.doi.org/10.1016/j.agsy.2016.12.013> .

Bhattarai, M.D.*, Secchi, S., & Schoof, J. (2017). An Analysis of the Climate Change Mitigation Potential through Soil Organic Carbon Sequestration in a Corn Belt Watershed. *Environmental Management*, 59(1), 77-86. doi: 10.1007/s00267-016-0771-6.

Trlica, A., Walia, M. K., Krausz, R., Secchi, S., & Cook, R. L. (2016). Continuous Corn and Corn–Soybean Profits over a 45-Year Tillage and Fertilizer Experiment. *Agronomy Journal*. doi: 10.2134/agronj2016.06.0377.

Guida, R.J.*, Remo, J.W.F., & Secchi, S. (2016). Tradeoffs of strategically reconnecting rivers to their floodplains: The case of the Lower Illinois River (USA). *Science of the Total Environment*, 572, 43-55. doi: <http://dx.doi.org/10.1016/j.scitotenv.2016.07.190>.

McClain, S.N.*, Bruch, C., & Secchi, S. (2016). Adaptation in the Tisza: innovation and tribulation at the sub-basin level. *Water International*, 41(6), 813-834. doi: 10.1080/02508060.2016.1214774

Guida, R.J.*, Remo, J.W.F., & Secchi, S. (2016). Applying geospatial tools to assess the agricultural value of Lower Illinois River floodplain levee districts. *Applied Geography*, 74, 123-135. doi: <http://dx.doi.org/10.1016/j.apgeog.2016.07.002> .

Teshager, A.D.*, Gassman, P.W., Schoof, J.T., & Secchi, S. (2016). Assessment of impacts of agricultural and climate change scenarios on watershed water quantity and quality, and crop production. *Hydrology and Earth System Sciences*, 20(8), 3325-3342. doi: 10.5194/hess-20-3325-2016.

Remo, J.W.F., Guida, R.J.*, & Secchi, S. (2016). Screening the Suitability of Levee Protected Areas for Strategic Floodplain Reconnection Along the LaGrange Segment of the Illinois River, USA. *River Research and Applications*. doi: 10.1002/rra.3055.

Wade, T., Kurkalova, L., & Secchi, S. (2016). Modeling Field-Level Conservation Tillage Adoption with Aggregate Choice Data. *Journal of Agricultural and Resource Economics*, 41(2), 266–285.

Teshager, A.D.*, Gassman, P.W., Secchi, S., Schoof, J.T., & Misgna, G. (2016). Modeling Agricultural Watersheds with the Soil and Water Assessment Tool (SWAT): Calibration and Validation with a Novel Procedure for Spatially Explicit HRUs. *Environmental Management*, 57(4), 894-911. doi: 10.1007/s00267-015-0636-4 .

Varble, S.*, Secchi, S., & Druschke, C.G. (2016). An Examination of Growing Trends in Land Tenure and Conservation Practice Adoption:

Results from a Farmer Survey in Iowa. *Environmental Management*, 57(2), 318-330. doi: 10.1007/s00267-015-0619-5.

Cooke S.L., A.C. Lloyd*, A.D. Montebianco and S. Secchi. 2015. Moving to higher ground: Ecosystems, Economics and Equity in the Floodplain. National Center for Case Study Teaching in Science. URL: http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=778&id=778

Ding, D., Bennett, D., & Secchi, S. (2015). Investigating impacts of alternative crop market scenarios on land use change with an agent-based model. *Land*, 4(4), 1110-1137.

Dodder, R.S., Kaplan, P.O., Elobeid, A., Tokgoz, S., Secchi, S., & Kurkalova, L.A. (2015). Impact of energy prices and cellulosic biomass supply on agriculture, energy, and the environment: An integrated modeling approach. *Energy Economics*, 51, 77-87. doi: <http://dx.doi.org/10.1016/j.eneco.2015.06.008>.

Smith, S., Varble, S.*, & Secchi, S. (2015). Fish Consumers: Environmental Attitudes and Purchasing Behavior. *Journal of Food Products Marketing*, 1-17. doi: 10.1080/10454446.2014.940114.

Liu, C.-C., Herriges, J.A., Kling, C.L., Secchi, S., Nassauer, J.I., & Phaneuf, D.J. (2014). A Comparison of Value Elicitation Question Formats in Multiple-Good Contingent Valuation. *Frontiers of Economics in China*, 9(1), 85-108. doi: <http://dx.doi.org/10.3868/s060-003-014-0006-2>.

Druschke, C.G.*, & Secchi, S. (2014). The impact of gender on agricultural conservation knowledge and attitudes in an Iowa watershed. *Journal of Soil and Water Conservation*, 69(2), 95-106. doi: 10.2489/jswc.69.2.95.

Secchi S. (2013). Integrated Modeling for Conservation Policy Support. *Choices*, 28(3), 1-5.

Banerjee, S., Secchi, S., Fargione, J., Polasky, S., & Kraft, S.E. (2013). How to sell ecosystem services: a guide for designing new markets. *Frontiers in Ecology and the Environment*, 11(6), 297-304. doi: 10.1890/120044.

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for biofuel assessment. *Environmental Modelling & Software*, 48, 1-16. doi: <http://dx.doi.org/10.1016/j.envsoft.2013.05.007>

Varble, S.*, & Secchi, S. (2013). Human consumption as an invasive species management strategy. A preliminary assessment of the marketing potential of invasive Asian carp in the US. *Appetite*, 65, 58-67. doi: <http://dx.doi.org/10.1016/j.appet.2013.01.022>.

Muste, M., Bennett, D., Secchi, S., Schnoor, J., Kusiak, A., Arnold, N., . . . Rapolu, U. (2013). End-To-End Cyberinfrastructure for Decision-Making Support in Watershed Management. *Journal of Water Resources Planning and Management*, 139(5). doi: doi:10.1061/(ASCE)WR.1943-5452.0000289.

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Secchi, S., Gassman, P. W., Jha, M., Kurkalova, L., & Kling, C. L. (2011). Potential water quality changes due to corn expansion in the Upper Mississippi River Basin. *Ecological Applications*, 21(4), 1068-1084. doi: 10.1890/09-0619.1.

Kling, K.L., S. Secchi, and M. Peters. 2011. NRCS Environmental Credit Trading Reference. Washington D.C. U.S. Department of Agriculture. URL: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045650.pdf

Secchi, S., Kurkalova, L., Gassman, P. W., & Hart, C. (2011). Land use change in a biofuels hotspot: The case of Iowa, USA. *Biomass and Bioenergy*, 35(6), 2391-2400.

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Secchi S. and S. Soman. 2010. Mandatory and Voluntary Conservation Policies: Competing Visions or Complementary Approaches? In: Human Dimensions of Soil and Water Conservation: A Global Perspective. (T. Napier, ed.) Nova Science Publishers. [peer reviewed]

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Kurkalova L., S. Secchi, and P. W. Gassman. 2009. Corn Stover Harvesting: Potential Supply and Water Quality Implications. In: Handbook of Bioenergy Economics and Policy (M. Khanna, J. Scheffran, and D. Zilberman, eds.) Springer. [peer reviewed]

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from Twenty Years of Experience (J. Freeman and C. Kolstad, eds.)
Oxford University Press, New York. [peer reviewed]

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Secchi S., T. M. Hurley, B. Babcock and R. L. Hellmich. 2006. Managing European Corn Borer Resistance to Bt Corn with Dynamic Refuges. In: Regulating Agricultural Biotechnology: Economics and Policy (R. Just, J. Alston, and D. Zilberman eds.) Springer.

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Another kind of inflation: economic benefits of CO2 pipelines

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Silvia Secchi is a professor in the Department of Geographical and Sustainability Sciences at the University of Iowa. She has a PhD in economics from Iowa State University.

There is a long tradition of industry proponents overselling the economic benefits of pipelines by paying for economic impact studies.

Two kinds of goals drive this practice. The first is to increase the social acceptability of the pipelines, which often require formal environmental assessments because of their long and short-term environmental effects. Local landowners and environmental groups often oppose the projects, concerned about impacts on existing infrastructure like tile drainage, and on water and land resources. Second, if the pipelines are in line for subsidies, such studies help create the impression that the subsidies are justified.

The inflated economics reports go back to the [Trans-Alaskan pipeline in the 1950s and early 1970s, and the more recent infamous examples of the Keystone XL and the Dakota Access pipeline](#). The tricks in the consultants' playbook have largely remained the same.

In this post, I will discuss several issues associated with the [report that Ernst and Young prepared for Summit Carbon Solutions](#).

"UNREASONABLE ASSUMPTIONS" PRODUCE "MISCHIEVOUS RESULTS"

First of all, the report states that "EY conducted the analysis presented in this report based on data provided by Summit. Summit provided EY with construction-related costs, hiring and salary data during Project construction and pipeline operation."

In other words, **the foundational information for the report has not been**

independently vetted, and was produced by the very entity that would benefit from inflated economic impact results.

This is a time-honored tradition. Professor John Crompton from Texas A &M [writes](#) (unfortunately, this great article is paywalled):

By hiring consulting firms with nationally respected names, sponsors also are buying the aura of respect and integrity that accompanies the consultant's name, anticipating that this will enhance the credibility and public and political acceptance of the results and quell any questioning of the procedures used. How might such consultants retain and protect their reputations when they use inappropriate procedures to give clients the large-dollar impact number that sponsors usually are seeking? Two strategies are used widely. First, extensive qualifiers are likely to be inserted into the report. A second strategy for protecting consultants' reputations often is found in the cover letter accompanying a final report, as the following extract illustrates:

It should be noted that the analysis utilizes assumptions that were developed based on our market analysis, surveys with comparable arenas, hypothetical lease terms, and *conditions and assumptions provided by the City and the developer.*" (Deloitte and Touche 1997, emphasis added).

Thus, the consultants offer no critique of the legitimacy of the assumptions given to them by the project's strongest advocates but merely accept the assumptions as a given irrespective of how outrageous they may be. These explicit and extensive qualifying statements invariably receive no visibility in the ensuing publicity announcing the report's results, as advocates tout only the outrageously high numbers that typically emerge. These qualifiers provide the loophole that enables consultants to make unreasonable assumptions, engage in doubtful procedures, and announce mischievous results.

Here is the fine print disclaimer in the report that Ernst & Young LLP prepared for Summit (emphasis added):

The services performed by Ernst & Young LLP (EY US) in preparing this report for the Summit Carbon Solutions were advisory in nature. Neither the report nor any of our work constitutes a legal opinion or advice. No representation is made relating to matters of a legal nature. Our scope of work was determined by Summit and agreed to by EY US pursuant to the terms of our engagement agreement. *Certain analyses and findings in this report are based on estimates and/or assumptions about the cost of construction and operation of the Summit Carbon Solution's pipeline project.* The findings and analyses contained in the report are based on data and information made available to EY US through the date hereof. Should additional relevant data or information become available after the date of the report, such data or information may have a material impact on the findings in the report. EY US has no future obligation to update the report.

The report is intended solely for use by Summit Carbon Solutions. While we

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believe the work performed is responsive to Summit's request pursuant to the scope of work in the SOW, we make no representation as to the sufficiency of the report and our work for any other purposes. Any third parties reading the report should be aware that the report is subject to limitations, and the scope of the report was not designed for use or reliance by third parties for investment purposes or any other purpose. We assume no duty, obligation, or responsibility whatsoever to any third parties that may obtain access to the report.

Bleeding Heartland readers may be interested in knowing that there is a growing literature on "mischievous results" of these commissioned, non-peer reviewed economic impact studies.

"WORKER YEARS" METRIC MAKES JOB NUMBER LOOK BIGGER, MORE STABLE

Second, the report obfuscates how many jobs would be created, for how long, and where, by using worker years ([a method Dave Swenson already thoroughly debunked in the case of the Dakota Access pipeline](#)), not clearly articulating the changes between the transitory 2022-2024 construction period and the operations period starting in 2025, and not being clear about whether employees in the construction phase will be coming from outside the region (or from out of state in each of the states).

Let me give you specifics by looking at Summit employees as an example.

The report states that Summit employees "will contribute 448 worker years over the course of the construction period (2022–2024), for an average of 149 jobs per year." After the construction period, "Summit's ongoing operations will support 1,170 jobs. 114 of those ongoing jobs will be Summit employees."

Piecing together footnotes and state-level information from the report itself, Summit plans to hire 51 people in 2022, 131 in 2023 and 36 in 2024 so it will have 218 employees in 2024 for "Project oversight". Then the number goes down to 114 in 2025.

The construction-period jobs are mostly in Iowa, but the operation jobs are distributed across the five states as illustrated in the table below. So, Summit plans to have 200 to 218 people working on the project in Iowa in 2024 (the range depends on how many of the average six employees in North Dakota will be working in 2024) and fire or relocate out of state more than three quarters of them (the range is from $200-47=153$ to $218-47=171$) in 2025.

The use of worker years and even that of yearly averages mask the temporary and quickly changing distribution of these jobs, making them appear more stable than they are. It is also not clear how many of the Summit employees engaged in project oversight in the construction phase would be hired from out of state, given the specialized and short-term nature of the jobs.

Summit employees by state and construction period

	Average number of employees in	Average number of employees in
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	2022-2024 (construction period)	2025 (operations period)
IA	143	47
MN	0	11
NE	0	11
ND	6	34
SD	0	12
Total	149	115

The issue of how many of the workers would be coming from out of state is even more important in the case of contractors. For example, in 2021, in Iowa there were 53 outfits operating in the oil and pipeline construction business, employing an average of eight people each, according to the Bureau of Labor Statistics.

In the whole five state region there were fewer than 5,800 workers in the industry, while the EY report projects that 4,240 construction workers and almost 1,000 professional/technical workers would be needed. In all states but Minnesota and North Dakota, these oil and pipeline construction businesses are very small (fewer than ten employees) and likely not well qualified or interested in the project.

The report does not specify what assumptions were made in regard to where the workers would be coming from. This is critical because out-of-state workers do not spend as much of their salaries in-state as local workers. Thus, the induced economic contributions (the money the contractors and Summit employees would spend in the region) could be substantially lower than projected. Notably, even [the study commissioned by the Dakota Access LLC](#) made these assumptions clear.

CONSTRUCTION MATERIALS MAY NOT BE PRODUCED LOCALLY

The report is also unclear about the **where the highly specialized construction materials would be coming from**. It states, “Due to the purchase of construction materials and services in states beyond the five pipeline states, Summit’s Project construction activities will generate \$1.5 billion in output across the remainder of the United States cumulatively between 2022 and 2024.”

The assumptions about the construction materials need to be made explicit, because if one incorrectly assumes that, for example, a high percentage of them is produced locally while it is not, the induced effects will again be inflated and the overall impact will be higher than it should be.

The overestimation of the effects is compounded by **the use of a national model** instead of one limited to the states where the pipeline will operate. This is not standard practice. For example, a [working paper](#) quantifying the economic impacts of CO2 pipelines for enhanced oil recovery in Wyoming only uses a Wyoming IMPLAN model. A [study looking at the projected impacts of FutureGen](#) – a now defunct project that would have implemented carbon capture and storage for a coal plant – only used the county where the project was to take place to estimate

plans to only assess the county where the project was to take place to estimate economic impacts.

TAX ANALYSIS IS CONFUSING AND INCOMPLETE

Fourth, **the report uses the IMPLAN model to generate tax impacts. This is not standard practice.** IMPLAN-based studies do this outside the model, and allocate the various taxes (payroll, sales etc.) to the appropriate geographical unit. This is how [the study commissioned by the Dakota Access LLC](#) conducted the fiscal analysis, and how [Colorado estimated the public revenue from the oil and gas industries in the state](#), for example.

The EY report's approach – which includes “Total tax contributions” (Direct + Indirect + Induced) is confusing and its numbers cannot be compared to those of other studies.

Notably, as the report itself acknowledges, **the tax analysis ignores that those tax payments would be offset by federal and state subsidies:** “The analysis does not include tax impacts derived from Section 45Q, which provides an annual federal tax credit for the sequestration of carbon dioxide. Summit estimates that the value of such credits will be \$414 million in 2025.”

As taxpayers, the analysis that matters to us is whether this is the most cost-effective project public funding should be used for. Would those \$414 million be better spent elsewhere if we want to mitigate climate change? Arguably that is the reason why the public funding is there in the first place, so we should really consider alternatives.

Of course, we need to consider the environmental impacts the various alternatives as well, but that is a story for another day.

Finally, I want to make clear that I am the sole author of this post. I have of course read [Dave Swenson's](#) reports and writing, and I cited them here when appropriate. But the industry would do well to leave him alone and stop harassing him.

I also note that have received no compensation for my work on the pipelines, and I intend to continue to do so in the future for all my public scholarship and outreach contributions. In fact, since I moved back to Iowa, I determined not to accept any consulting money, given the pervasive and pernicious problem of industry entities funding academics. I believe that practice creates at minimum the appearance of a conflict of interest, and that consulting funding needs to be clearly disclosed whenever academics write or speak about controversial issues that powerful lobbies stand to benefit from.

Top image: Carbon dioxide pipeline warning sign. Photo by Jeffre Beall, creative commons license [CC BY 4.0](#), via [Wikimedia Commons](#).

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IOWA VIEW | Opinion *This piece expresses the views of its author(s), separate from those of this publication.*

Opinion: Don't be fooled by exaggerated 'benefits' of carbon pipelines

Studies like this new one mischaracterize benefits and ignore costs, particularly environmental ones.

Silvia Secchi Guest columnist

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Key Points

Silvia Secchi is a professor in the Department of Geographical and Sustainability Sciences at the University of Iowa.

One of the companies proposing pipelines in Iowa to sequester CO₂ from ethanol production commissioned a report from a private firm, Ernst & Young, that vastly overestimates the economic benefits of the pipelines.

This is not the first time pipelines' benefits have been inflated — it has, in fact, happened repeatedly, from the Keystone XL to the Dakota Access pipeline. A report by Iowa State University economist Dave Swenson makes this clear.

These studies are a rhetorical device to convince decision makers and local communities of the benefits of pipelines, but they are not a very useful policy tool because, as I will detail below, they mischaracterize benefits and because they ignore costs, particularly environmental ones. The CO₂ ethanol pipelines are different from oil pipelines like Keystone because they critically depend on subsidies from the federal government and California, so the public should have access to credible, science-based information on whether there are more effective ways to spend public money to reduce greenhouse gas emissions, and the environmental costs of all alternatives should be thoroughly assessed.

The Ernst & Young study follows the Dakota Access playbook in overestimating the economic impacts of the pipelines, which are largely transitory and limited to the construction period, and — even then — heavily depend on out-of-state inputs and labor.

The real economic benefits of the pipelines will be much lower than estimated by Ernst & Young because none of the pipe, valves, pumps, and so on, are manufactured in the pipeline states. And the highly skilled welders who would be employed during construction are likely to come from Louisiana, Oklahoma and other places where pipeline industries are clustered, not the Midwest. Swenson, who just retired from Iowa State and is an expert on these issues, confirmed that, for example, with the Dakota Access pipeline, only 16 Iowa-based welders were certified to work on the pipeline.

The transitory nature of the employment benefits in particular is masked by the use of “worker years” over the life of the project instead of assessing the employment effect every year. That approach would show how little long-term effects the projects have on employment in our region. Ernst & Young also overestimates the effects of the pipeline on the economy by using a national model instead of one that considers only the region of construction and operation, and by using that model to estimate tax impacts. The use of the national model inflates the indirect and induced economic activity effects.

The pipelines will have minimum positive economic impacts once they are installed, but the risks and long-term effects on land will be long-lasting. The bottom line is that this commissioned study overestimates the benefits and has nothing to contribute to the issue of costs: monetary costs of the subsidies that would fall on Iowans as taxpayers, health risks to human and animals, and environmental costs to the land.

Last but not least, let us consider the elephant in the room. The pipeline will provide a rationale to keep growing corn and using it for ethanol for a long time. The industry and the Register’s editorial board are well aware that the future of corn ethanol is not bright. Ethanol is a complement to gasoline, not a substitute for it. Half of Iowa corn acres and a third of US corn acres (over 30 million) go to produce 15 billion gallons of ethanol, about 10% of US consumption before COVID-19. This is the reason why we have the E10 mandate in the Renewable Fuel Standard.

The US has about 320 million acres of cropland overall. It is pretty obvious corn ethanol isn't scalable as a gasoline substitute, so its fortunes are tied to it. We should be seriously discussing ways to diversify Iowa’s agriculture away from corn, not invest resources in a technology that contributes to climate change and is not going to be economically competitive in the long term. It is unconscionable to even consider the use of public money and eminent domain for such projects.

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