

Argus Q&A: John Savage

John Savage is managing director of the Verdeo Group, which he co-founded in 2007. He leads Verdeo's initiatives in the oil and gas sector, which aim at turning companies' emissions liabilities into assets. He has over 10 years experience in the renewable energy and carbon finance markets, and has advised organizations seeking to develop carbon-driven business strategies. He was previously an executive with leading renewable energy retail supplier, Green Mountain Energy, working in most regional power markets in the US. He helped develop wind and solar projects and led the expansion of three of the Environmental Protection Agency's top five nationally-rated utility green power programs. In this interview, edited for length and clarity, Savage discussed offset opportunities for oil and gas companies.

Argus: What are the biggest concerns for oil and gas companies under the Kerry-Boxer climate bill in the Senate?

Savage: The largest concerns are around the point of regulation and allowance allocation. But our company's focus is primarily on offset opportunities for oil and gas companies. In this context there have been some positive developments as the legislation progressed through Congress over the past few months. It has become much clearer that the intent of the legislation is to enable oil and gas companies to generate offset credits from certain emission-reduction projects. That is a little silver lining in the face of some very significant changes the legislation will bring about for the industry.

Argus: How big of a role will the reduction of fugitive gas emissions play in future climate policy and what kind of projects are involved?

Savage: Offset projects will play a critical role in cost containment for any cap-and-trade legislation. Companies have a limited set of options to meet compliance obligations. One is direct emissions reductions from a capped source. Second is trading and purchasing allowances from other sources. Thirdly, buying offset credits that will be fungible with allowances. The concept is to mitigate economy-wide costs of compliance by allowing the cheapest reductions available to make their way into the system. Offsets play a critical role in cost containment and EPA modeling of bills has shown that. One of the best sources in the oil and gas industry is to reduce fugitive methane emissions. This is particularly attractive because there is potential for a double benefit — you keep natural

gas from escaping out of the system, and that has a BTU value, and there is an emissions-reduction value. Our modeling suggests that for every thousand feet³ (mcf) of gas you keep out of the atmosphere, you can generate \$10/mcf from those projects from both gas value and carbon value. At higher carbon prices of say \$15-\$20/ton, the carbon value begins to exceed the gas value. So these projects could be quite economic to implement. There are a wide variety of project types companies can implement throughout the production, transmission and distribution sectors. Much of the equipment is powered by natural gas-powered devices, like pneumatic controllers and pneumatic pumps. These all bleed methane in pretty significant volumes once added up across the company. Compressor stations are sources of emissions and in all cases there is readily available technology to reduce emissions. But project barriers have ranged from no requirement to reduce emissions, to the fact that such action may not be meaningful from a gas savings or capital investment standpoint. These are essentially efficiency projects that seldom meet the threshold required for investment. But the potential of the cap-and-trade program and economic opportunity associated with carbon is beginning to change incentives for companies.

Argus: Can you confirm that gas production facilities and fugitive gas emissions are not capped under the proposed climate legislation? Do the House and Senate proposals differ on how offsets, such as for fugitive gas, are treated?

Savage: Our interpretation of the language in Kerry-Boxer suggests that gas production facilities may not be capped. All industrial sources emitting over 25,000 mt/yr CO₂e are capped, but the definition of industrial sources does not include the gas production sector. Fugitive methane emissions are not part of the calculation for GHG emissions for which companies must surrender allowances, so they are also outside the cap. In addition, under Kerry-Boxer, fugitive methane emissions from oil and gas facilities are specifically identified as eligible sources of offset projects.

Argus: Sen. Debbie Stabenow (D-Mich.) has introduced amendments to the offsets section of Kerry-Boxer. How does this differ from offsets provisions in the House-passed Waxman-Markey bill and Kerry-Boxer?

Continued on p2

John Savage

Continued from p1

Savage: There are three key differences going from Waxman-Markey to Kerry-Boxer and the Stabenow amendment. Waxman-Markey requires EPA to promulgate regulations for methane emissions from oil and gas facilities. That section was changed in Kerry-Boxer so it now states that no such regulations shall be put in place before 2020. This means fugitive methane emissions sources could be eligible as offsets. If they were regulated, they could not be eligible as offsets. Kerry-Boxer also includes a recommended list of eligible offset projects, and that includes fugitive methane emissions from natural gas systems. The Stabenow amendment strengthens that legislation to direct the EPA to include those project types as eligible for offsets. While Kerry-Boxer left it to EPA to decide what projects become eligible, Stabenow provides a mandate to include those project types. The third key change is in the Stabenow amendment, where the rules for early action are clarified so that any company that implemented an eligible project between 2001 and 2009 could earn a full 10-year crediting period for emissions reductions. So if you implement a project in 2008 that EPA deemed eligible you could earn credits through to 2017. Previously in Waxman-Markey that crediting period was three years. So the Senate legislation, including the Stabenow amendment, proposes much more favorable rules for early actors. We are members of the Coalition for Emissions Reduction Projects (CERP), which has been promoting to Congress what it believes would be good rules for an offset program. CERP includes carbon-offset developers, large utilities and investment companies.

Argus: The GHG mandatory reporting rule kicks in from 2011 for facilities with more than 25,000 tons/yr of GHG emissions. Could there be a temptation later to reverse the uncapped status of fugi-


tive methane emissions, given that they will be monitored under the reporting rule?

Savage: There is an important distinction between reporting and regulation. It is normal to assume reporting might lead to regulation. But an alternative point of view is worth considering. The legislation working its way through Congress shows an intent to allow emissions-reductions projects to earn offset credits. EPA will be tasked with defining the rules and methodologies for these projects. So data coming out of this reporting rule is likely to enable EPA to construct baseline methodologies for the different emissions-reduction project types. So one silver lining coming out of the reporting rule is the data that is collected could form the basis for companies to do these offset projects and benefit from the carbon value they capture. Our focus is not on helping companies comply with the reporting rule or implement systems to gather data. But we do use information gathered in that process to help identify project opportunities.

Argus: How much more complicated would life be for companies if, in the absence of federal legislation, the EPA steps in to regulate carbon emissions from large emitters, which the Supreme Court has indicated it can do under the Clean Air Act?

Savage: Other than refiners, the economics for reducing emissions are much worse for most oil and gas companies under regulation than under a cap-and-trade system. Under regulation the EPA is going to define BACT [Best Available Control Technology] to control GHG emissions and companies will have to spend money to comply with those requirements. In the cap-and-trade case, most companies will have an economic incentive to implement the same solutions. In the first scenario

Continued on p3

	<p>Argus US Carbon is published by Argus Media Ltd</p>	<p>Bureau chief: Ross Allen Argus US Carbon Editor: Mike Ball Production editors: Andrew Sutton, Daniel Wackerow</p>
<p>Main offices: London (head office): Argus House, 175 St John St, London EC1V 4LW Tel: +44 20 7780 4200 Fax: +44 20 7780 4201 email: agm@argusmedia.com — email: sales@argusmedia.com Houston office: 3040 Post Oak Blvd, Suite 550, Houston, TX 77066 Tel: +1 713 968 0000 Fax: +1 713 622 2991 Washington office: 1012 Fourteenth Street NW, Suite 1500, Washington, DC 20005 Tel: +1 202 775 0240 Fax: +1 202 872 8045 Singapore office: 22 Malacca Street, #10-02 Royal Brothers Building, Singapore 048980 Tel: +65 6496 9966 Fax: +65 6533 4181 Moscow office: 12-1 Krivokolennyi pereulok, floor 5, Moscow, Russia 101990 Tel: +7 495 933 75 71 Fax: +7 495 933 75 72 Publisher: Adrian Binks CEO Americas: Euan Craik Business development: Daniel Massey, Miles Weigel, Caroline Gentry</p>		<p>Editorial Washington: Abby Caplan, Molly Christian, David Givens, David Ivanovich, Kim Krieger, Joanna Franco Marsh, Pamela Najor, Christopher Newman, Hannah Northey, Anne O'Neil, Claire Pickard-Cambridge, Carrie Sisto, Todd Tranausky Houston: Nicole Andries, Robert Brelsford, Zander Capozzola, Jena Goebel, Jeff Kralowetz, Emily Lewis, David Love, Philip MacFarlane, Tim Mingee, Karl Palsgaard, Casey Sattler, Amanda Hillman Smith, Daphne Tan, Michelle Woods New York: Peter Gardett, Nasreen Tasker, Conway Irwin Sales and marketing Chris Bozell, Peter Brown, Kristian Copeland, Charles Davis, Karen Johnson, Ashli Matus George, Umer Qureshi, Susan Teves, Howard Walper, Sekani Williams, Tammy Tiedt, Christina Vassil</p> <p>Reproduction, scanning into an electronic retrieval system or copying to a database is strictly prohibited without the written permission of the publisher. All rights reserved (ISSN 1942-387X). Copyright © 2009 Argus Media Ltd</p>

John Savage

Continued from p2

you have a cost to reduce emissions, in the second scenario you have an incentive. So under a market-based cap-and-trade system you are likely to get more emission reductions than under a regulatory approach.

Argus: Verdeo Group has worked with the Climate Action Reserve (CAR), created under California legislation, to complete its coal-mine methane offset protocol. Can you discuss the way it will work and what has been learned from that?

Savage: One of the key building blocks needed in the market for companies to earn offset credits is an improved methodology — how to calculate, quantify and verify emissions reductions from a project. CAR has been providing a lot of leadership to the market and developing methodologies for new project types. Verdeo was on the working group for the mine-methane protocol which CAR released in October. CAR's process is very thorough; it is a stakeholder process and includes representatives from industry, regulators and environmental groups in a broad coalition to establish eligibility and other criteria for projects. Our company has been involved in methodology development internationally, including with the Clean Development Mechanism. Working with CAR was the first time I have seen a certification group hit their deadline for issuing an improved methodology, so they run a high-quality, efficient process. These credits will be eligible under a federal program. Our approach is to help implement projects that will produce eligible credits in a federal compliance

program as these are likely to have the most market value. So we are working with certification bodies and developing methodologies with the best chance of being approved by EPA in the future. CAR and the American Carbon Registry are in the lead because both were singled out in Kerry-Boxer as approved kinds of programs.

Argus: Are there jurisdictional issues for carbon offsets from the gas industry similar to what transpired with renewable energy certificates in the power industry? If transmission companies do not own the gas, can they claim ownership of offsets?

Savage: The answer is yes. There are some open questions about the relationship between the ownership of gas and emission rights that result from a methane-reduction project. In the transmission sector this is particularly interesting because the transmission company typically controls the equipment which is the source of emissions but it does not own the gas being emitted. One could argue that if a transmission company installs some technology to reduce emissions they should have title to the emission rights because they made the investment. Furthermore they will be responsible for any liability that may exist as a result of the emissions. So while gas owners may want to claim the emission right I doubt they would want to claim the emission liability. Secondly, fugitive capture projects keep more gas in the pipeline which benefits the gas owner. But this is the kind of issue that will be worked out early in the market's development through precedent, and it is potentially the type of issue EPA may ultimately have to resolve.

ARGUS US CARBON | Policy, Technology & Markets

Get better information – not just more. Gain access to regional market coverage, exclusive commentary from industry leaders, and analysis of emerging carbon policy.

For a free trial subscription, call 713.968.0000 or contact sales@argusmedia.com. Visit Argus US Carbon online at www.arguscarbon.com.