Testimony of Chris Neme
Principle, Energy Futures Group
On Behalf of Natural Resources Defense Council (NRDC)
Opposition Testimony for Ohio Senate Bill 320
November 29, 2016

Chairman Balderson, Vice Chairwoman Jones, Ranking Member Gentile, and Members of the Ohio Senate Energy and Natural Resources Committee, thank you for the opportunity to testify today. My name is Chris Neme. I am a co-founder and Principal of Energy Futures Group, a consulting firm that provides specialized expertise on energy efficiency and renewable energy markets, programs and policies. On behalf of Natural Resources Defense Council (NRDC), I urge you to oppose SB 320.

Background and Qualifications

NRDC is a national environmental organization that began working in Ohio in 2008, just as the state's electric distribution utilities were first starting to plan energy efficiency programs to meet the newly-enacted clean energy standards. Since that time, NRDC has been a regular intervenor in the energy efficiency cases before the Public Utilities Commission of Ohio, and an active participant in collaborative meetings with the utilities, working to help improve the design and implementation of their programs, track their progress, and ensure that all Ohioans have access to cost-effective opportunities to control their energy costs.

I represent NRDC in three of the four Ohio distribution utility energy efficiency portfolio dockets for 2017-2019 that are currently pending before the Commission: AEP's, FirstEnergy's, and Duke's. I have also been involved in past Ohio regulatory matters such as First Energy's bidding of efficiency resources into the PJM capacity market (Docket 12-1230-EL-SSO) and the development of Ohio's Technical Reference Manual (TRM), which is the basis on which Ohio's utilities estimate much of the savings produced by their energy efficiency programs. I also represent NRDC in nearby states like Illinois and Michigan on energy efficiency program and portfolio design, cost-effectiveness screening, evaluation, shareholder incentive structures and other related topics. Over the past two decades, I have worked on energy efficiency policies and programs for energy regulators, other government agencies, efficiency advocates and utilities in more than 30 states and provinces, as well as parts of Europe. A copy of my CV is attached to my written testimony.

Because energy efficiency is my principal area of expertise, I will confine my testimony today to the parts of substitute SB 320 that affect the energy efficiency standard.

Summary of Energy Efficiency Program Benefits

Ohio's utility-run efficiency programs give people and businesses rebates, technical information and other support necessary to help them make investments that save money on their energy bills. Importantly, the law requires that all utility programs be cost-effective, which means that they must produce more in energy savings for consumers than the programs cost.

All four major Ohio utilities have themselves documented the significant energy savings from these programs through annual reports filed with the Commission. Based on key utility estimates of avoided electricity supply costs, we estimate that the utilities' efficiency programs have delivered on the order of $2 billion in net economic benefits to Ohioans to date. And that is a conservative number because the

utilities have not fully quantified several key benefits of their efficiency programs. Nor does it account for the reduced risk of exposure to future fuel price volatility and costs of compliance with future environmental regulations.

It is also important to recognize that it is not just the customers who participate in the programs who benefit. Many of the benefits of efficiency programs accrue to all electricity customers – including reduced need for new power plants, reduced need for investment in transmission and distribution system infrastructure (the "poles and wires" that deliver electricity to homes and businesses), reduced future environmental compliance costs and reduction in market prices for energy. In other words, when a residential customer saves energy it also benefits large industrial customers, hospitals, grocery stores and all other customers. The converse is also true. When a factory or office building saves energy, it also benefits all other business and residential customers.

All available evidence suggests there is much more that can be done. For example, in its 2017-2019 efficiency program plan currently pending before the PUCO, AEP projects that it will save customers 1.3% of their electricity consumption in each of the next three years, beating its statutory requirement of 1.0% per year by a substantial margin. AEP estimates that its customers will see about $400 million in reduced energy costs as a result.[1] Similarly, First Energy's 2017-2019 filed plan forecasts energy savings closer to 1.5% in each of the next three years; it also estimated that its plan will save its customers about $400 million.

Problems w/SB 320

If Ohio wants to continue these benefits for consumers in the coming years, then it is critical that the energy efficiency standards be reinstated, and that they be enforceable and mandatory (as opposed to "voluntary"), meaningful, and robust for all customer classes.

Unfortunately, SB 320 does not do that. It is rife with problems that would result in a major step backwards for the state. We have three main concerns with the bill:

1. Its removal of penalties and compliance measures associated with the energy efficiency standards, rendering the standards essentially voluntary;
2. Its watering down of what "counts" as energy efficiency with measures that are not appropriate; and
3. Its expansion of the primary voltage opt-out that was passed two years ago in SB 310, to include all mercantile customers in Ohio (a far larger number of customers).

These provisions will have large adverse impacts on Ohio's energy efficiency programs, ultimately depriving homeowners and businesses of cost-effective ways to control their energy bills.

[1] This is the estimated net economic benefits – energy bill savings minus both all utility program costs and the portion of efficiency measure costs borne by program participants – under the Total Resource Cost (TRC) test. It should be noted that the TRC test, particularly as it is commonly applied in Ohio, is very conservative in that it accounts for all efficiency costs but only a portion of efficiency benefits. The net benefits under the Utility Cost Test (UCT), which compares just the utility's efficiency program costs to just the benefits to the utility system, are considerably larger. In AEP's case, they are twice as large – on the order of $800 million.

1. Making efficiency programs "voluntary"

The bill would significantly reduce utility reporting requirements and remove all penalties for not meeting the annual efficiency standards. A standard that is not enforced is effectively no longer a *requirement*, but rather a *voluntary target*. While I understand the philosophical concern that some members of the legislature may have with requirements (or "mandates"), the reality is that cost-effective energy efficiency investments will simply not happen at anywhere close to economically optimal levels – or even anywhere close to the levels currently being proposed by Ohio's utilities, which are already lower than economically optimal levels – without enforceable standards.

I'm sure you're wondering – if energy efficiency is such a great deal, then why can't customers just do it on their own? Why do we even need these programs? Even though energy efficiency investments generate significant benefits both for participants in the programs and all customers in Ohio, homeowners and businesses are far less likely to make these investments on their own. Utility energy efficiency programs are essential to overcome market barriers, such as lack of information, high capital costs, transaction costs, and split incentives between landlords and tenants. Energy efficiency standards and associated programs are critical vehicles for realizing the huge potential for cost-effective savings.

I'm sure you're also wondering – don't utilities get cost-recovery and performance incentives for meeting certain annual efficiency benchmarks? Isn't that enough to make sure that programs happen, even with a voluntary standard? No, it isn't enough. Consider what happened here in Ohio when the SB 310 "freeze" on compliance with efficiency standards was enacted in 2014. First Energy essentially cancelled most of its efficiency programs. Similarly, following Indiana's repeal of its energy efficiency standard in 2014 (around the time Ohio SB 310 was passed), investment in energy efficiency programs in Indiana plummeted by more than 50% and the overall cost-effectiveness of programs was reduced, which means lower energy savings and a loss of jobs and related economic development. Those results are consistent with the national experience – states without specific, enforceable efficiency targets produce lower levels of savings than those that have requirements. While I suspect that at least some of Ohio's utilities would continue some level of programs under a voluntary standard, the savings levels will almost certainly be lower.

Put simply, energy efficiency should be treated as a resource that can be acquired in lieu of other supply and demand resources; indeed, it should be acquired whenever it can deliver services at a cost that is lower than those other resources such as new power plants, new "poles and wires," etc. Again, by any measure, Ohio is nowhere close to making economically optimal levels of investment in end-use electric efficiency. The result is that Ohio consumers are spending far more on electricity supply than they should. Making efficiency standards voluntary will just perpetuate that reality, with adverse effects for consumers and the local economy.

2. Watering down what "counts" as energy efficiency with inappropriate measures

SB 320 would reduce the effectiveness of Ohio's efficiency programs by allowing "heat rate" improvements at Ohio's coal and natural gas plants to count towards each utility's savings targets. This is inappropriate. Heat rate improvements make power plants more efficient – it's getting more electricity out of a lump of coal or a cubic foot of gas. I have no problem with making power plants more efficient – in fact, it's a good thing. But such improvements should not be included in a customer-focused efficiency standard, and certainly not without significant increases in the amount of savings that have to be acquired under the standard.

There are several reasons for this:

- First, w*e're talking about two separate things*. Heat rate improvements are about operations, making the most out of power generation. Utilities already have plenty of incentives to make their power plants more efficient, and they should be using their O&M $$ to make that happen, not cannibalizing the EE standard. In contrast, the EE standard is focused on customers. The standard is intended to help customers cut energy use and energy demand through distribution utility-run programs. It all happens behind the meter at the customer's home, business, or industrial facility. These customer-focused programs are completely separate and apart from what happens at power plants.

- Second, it would assign credit to many changes that are going to be made anyway. The whole point of efficiency standards is to drive investments in efficiency that would not otherwise occur. Utilities are regularly upgrading their plants to make them more efficient. If utilities could count all such upgrades under the energy efficiency standard, it would undermine the fundamental purpose of customer-focused energy efficiency programs.

- Third, unless the savings standards are made much more aggressive, it could greatly reduce the amount of real cost-effective savings produced for consumers.

- Fourth, it raises some fundamental operational and possibly even legal questions. Each of Ohio's major utilities is separated into two distinct entities: (1) distribution utilities that are regulated by the Commission and are subject to the energy efficiency standard; and (2) their unregulated generation affiliates, which are not regulated. Would the regulated distribution utilities be allowed to provide ratepayer funds to support investments in power plants? Which power plants get to count – only those within the geographic boundaries of its service territory, even if the distribution utility's customers are buying power from plants outside that area? Would they be allowed to give preferential treatment to power plants owned by their affiliated companies?

I'm not aware of any other state efficiency standard that allows power plant heat rate improvements – or any other improvements on the utility's side of the meter (i.e. non-customer savings) – to count towards the annual requirement.

In addition, SB 320 has language explicitly identifying such things as "consumer reductions in water usage or reductions and improvements in wastewater treatment" as savings that can count towards savings standards. This language is confusing. If the intent of this language is to allow savings from efficiency investments in waste water treatment plants to count, it is unnecessary. The utilities already have the ability to offer programs to municipalities to promote such investments and to count the savings. If the intent is to allow counting of savings that are naturally-occurring relative to an assumed "inefficient practice" rather than relative to a real baseline of how water would be produced and treated absent a new efficiency investment, then it is highly problematic. This is because it makes meeting the standard more of an artificial accounting exercise – wasting electric ratepayer money in the process – than an effort to produce new, real savings that have economic benefits to electric ratepayers and the local economy.

Put simply, SB 320's expansion of what "counts" as energy efficiency would only erode the standards and reduce customer access to high-quality, cost-effective energy options to control energy costs.

3. Putting programs at risk by expanding opt-out to all mercantile customers.

SB 320 would expand the existing large industrial opt-out. In 2014, SB 310 allowed the largest-of-the-large industrial customers (called "primary voltage" customers) to opt out of paying the energy efficiency rider. That large customer opt-out goes into effect on Jan 1, 2017, and we don't yet know its impacts and how many customers will take the option. SB 320 would prematurely expand that existing opt-out to all customers in the "mercantile" customer class (i.e., customers that use at least 700,000 kWh per year)—a much larger category that encompasses most small, medium and large manufacturing facilities in Ohio, as well as many commercial customers. This would essentially be a "freeze" on Ohio's industrial EE programs.

The industrial sector has some of the most cost-effective energy savings potential of any customer class. In my experience, even the largest and most sophisticated of industrial customers do not capture all of this potential. This is usually because they limit their investments to projects that have very short paybacks – typically one to three years. In contrast, no utility would limit its investment in the supply of electricity to those that pay off within just one to three years; their planning cycles are often decades long. Utility-run efficiency programs help bridge this divide by providing financial incentives to buy down the cost of efficiency investments for business customers. They can also provide specialized technical expertise, which can be just as important in helping industrial customers identify and pursue cost-effective savings.

And, as I previously noted, industrial investments in efficiency not only reduce specific industrial customers' energy bills, they also provide significant system-wide benefits that put downward pressure on rates for residential and small commercial customers. Allowing the lion's share of the industrial (and likely commercial) class to opt out means that utilities will have to scale back their industrial efficiency programs, depriving not just those customers, but all Ohioans, of valuable cost savings. At the same time, the industrial customers will be benefiting from energy savings produced by residential and small business customers. That seems inequitable.

As I mentioned above, the SB 310 large customer opt-out goes into effect on Jan 1, 2017, and we don't yet know its impacts and how many customers will take the option. It would be more prudent to wait and see what the impacts of the first opt-out are before we go off and make it even larger.

There's also a question of why we need to expand the opt-out when, back in 2008, SB 221 already included a provision for mercantile customers to "self-direct" their energy efficiency projects. This provision already gives mercantile customers flexibility and appears to be working well (ORC 4928.66 (A)(1)(c)). Mercantile customers can opt out of participating in the EE rider as long as they provide some basic information on energy efficiency projects they're doing on their own. The process is simple – they fill out a form at the Commission, and it gets automatically approved within 60 days. This existing process is already being used by hundreds of industrial and commercial customers, and can fill the gap for any mercantile customers who are seeking added flexibility.

Conclusion

In closing, NRDC believes that a reinstatement of required standards, and ensuring that the standards are not watered down by excessive "counting" or opt-out, is absolutely essential for Ohio to realize the promise of energy efficiency.

We also note that if Ohio goes down the road of effectively removing its efficiency standards, it will not happen in a vacuum. Other states in the Midwest are moving forward, and SB 320 would only leave Ohio behind. In Illinois, for example, NRDC is helping craft pending legislation that would elevate that state as a leader in the Midwest (and possibly the country) in its energy efficiency standard. Similarly, last month, the Michigan Senate (which has is a Republican-supermajority similar to Ohio), passed a bill with a required 15% by 2020 RPS, and a 1.5% annual efficiency standard. We ask that Ohio not take itself out of the running as the rest of the region moves forward toward building out its clean energy infrastructure.

Please reject SB 320.

We appreciate your time and consideration today, and welcome any questions the Committee may have.

CHRISTOPHER NEME, PRINCIPAL

EDUCATION

M.P.P., University of Michigan, 1986
B.A.., Political Science, University of Michigan, 1985

EXPERIENCE

2010-present: Principal, Energy Futures Group, Hinesburg, VT
1999-2010: Director of Planning & Evaluation, Vermont Energy Investment Corp., Burlington, VT
1993-1999: Senior Analyst, Vermont Energy Investment Corp., Burlington, VT
1992-1993: Energy Consultant, Lawrence Berkeley National Laboratory, Gaborone, Botswana
1986-1991: Senior Policy Analyst, Center for Clean Air Policy, Washington, DC

PROFESSIONAL SUMMARY

Chris Neme leads a variety of consulting projects for clients across the United States, Canada, and Europe. He specializes in analysis of markets for energy efficiency measures and the design and evaluation of programs and policies to promote them. Prior to co-founding Energy Futures Group, he served as Director of the Vermont Energy Investment Corporation's 30-person consulting division. During his 20+ years in the energy efficiency industry, Mr. Neme has conducted or critically reviewed analyses of efficiency potential in ten states; reviewed or developed efficiency programs in more than 30 states and provinces and in Europe; and defended expert witness testimony before regulatory commissions in ten different jurisdictions. Mr. Neme has led training courses on the elements of good efficiency program design and published/presented assessments of efficiency markets, programs and policies through a variety of publications, conferences, Consortium for Energy Efficiency Committees, ENERGY STAR working groups and other forums. He previously served as Co-Chair of NEEP's EM&V Research and Evaluation Committee.

SELECTED PROJECTS

- ***New Jersey Board of Public Utilities.*** Serve on multi-firm management team responsible for administration and delivery of statewide New Jersey Clean Energy Programs (annual budget of >$200 million). Lead strategic planning and program design for the team; also support regulatory filings, cost-effectiveness screening and evaluation work. (2015 to present).
- ***Home Performance Council.*** Part of five-person drafting team for development of new National Standard Practice Manual for cost-effectiveness screening of energy efficiency measures, programs and portfolios. Manual expected to be completed, after several rounds of external review, in early 2017. (2016 to present)
- ***Regulatory Assistance Project - U.S.*** Providing guidance on efficiency policy and program design. Lead author on strategic reports, including what it would take to achieve 30% electricity savings over ten years, lessons from U.S. experience using efficiency programs to defer T&D system investments, and history of bidding of efficiency resources into New England ISO and PJM capacity markets. Also provide technical assistance to several state regulators, technical support to various Energy Foundation grantees across the U.S., and assistance in RAP's work with the U.S. EPA on efficiency's role in 111d carbon emission regulations. (2010 to present)

CHRISTOPHER NEME, PRINCIPAL

- ***Natural Resources Defense Council (Illinois & Michigan).*** Critically reviewed multi-year DSM plans filed by Illinois and Michigan utilities. Drafted and defended regulatory testimony on critiques. Represent NRDC in monthly stakeholder-utility meetings to review and provide feedback on efficiency potential studies, program designs, evaluation priorities, draft evaluation reports, cost-effectiveness screening, TRM savings assumptions, and other related topics. Also, assisting with strategy for maximizing the cost-effective use of efficiency to address EPA's proposed 111(d) regulations of carbon emissions from power plants. (2010 to present)

- ***Ontario Energy Board:*** Appointed by Ontario Energy Board to serve provincial gas DSM Evaluation and Audit Committee. Previously elected by non-utility stakeholders to serve on provincial Technical Evaluation Committee overseeing gas DSM evaluation planning and individual evaluation studies. Also served on Enbridge Gas's annual Audit Committee which oversaw an annual savings verification process. (2000 to present)

- ***Green Energy Coalition (Ontario).*** Representing a coalition of environmental groups in various regulatory proceedings. Present recommendations on DSM policies (including integrated resource planning on pipeline expansions), critically review and negotiate with utilities on proposed DSM Plans, and defend expert witness testimony. (1993 to present)

- ***Regulatory Assistance Project - Europe.*** Providing on-going technical support on efficiency policy and program design to RAP and its partners in the United Kingdom, Germany, and other countries. Reviewed draft European Union policies on Energy Savings Obligations, EM&V protocols and other related issues. Drafted a policy brief on design considerations for efficiency feed-in-tariffs, a report on bidding of efficiency resources into capacity markets, and a roadmap for achieving deep retrofits in half of the residential building stock. (2009 to present)

- ***Northeast Energy Efficiency Partnerships.*** Managed Regional EM&V forum project estimating savings for emerging technologies. Also, led project to assess national best practices and develop policy guidance on the use of efficiency to defer T&D investments. (2009 to 2015)

- ***Ontario Power Authority.*** Managed jurisdictional scans of how efficiency programs leverage building efficiency labeling/disclosure requirements and how non-energy benefits are addressed in cost-effectiveness screening. Also supported staff workshop on the role efficiency can play in deferring T&D investments. Presented assessment of future efficiency policy and program trends for Advisory Council on Energy Efficiency. (2012-2015)

- **Vermont Public Interest Research Group.** Conducted comparative analysis of the economic and environmental impacts of fuel-switching from oil/propane heating to either natural gas or efficient, cold climate electric heat pumps. Filed regulatory testimony on findings. (2014-2015)

- **New Hampshire Electric Co-op**. Led assessment of the co-op's environmental and social responsibility programs' promotion of whole building efficiency retrofits, cold climate heat pumps and renewable energy systems. Presented recommendations to the co-op Board. (2014)

- ***National Association of Regulatory Utility Commissioners (NARUC).*** Assessed alternatives to basing state energy efficiency goals on first year savings to eliminate disincentives to invest in longer-lived (but often more expensive) measures and programs. Work was ultimately for the Michigan Public Service Commission and was used by Commission staff to establish lifetime savings metrics for utility programs it regulates. (2013)

CHRISTOPHER NEME, PRINCIPAL

- ***California Investor-Owned Utility***. Senior advisor on EFG project to compare the cost of saved energy across ~10 leading U.S. utility portfolios. The research sought to determine if there are discernable differences in the cost of saved energy related to utility spending in specific non-incentive categories, including administration, marketing, and EM&V. (2013)
- ***Green Mountain Power.*** Helped develop new program to introduce ultra-efficient cold-climate heat pumps to Vermont residential and small business markets. (2012-2013)
- ***DC Department of the Environment (Washington DC).*** Part of VEIC team administering the DC Sustainable Energy Utility (SEU). Primary responsibilities are characterizing the DC efficiency market and supporting the design of efficiency programs that the SEU will be implementing. (2011 to 2012)
- ***Ohio Sierra Club.*** Filed and defended expert witness testimony on the implications of not fully bidding all efficiency resources into the PJM capacity market. Also critically reviewing First Energy's and other utilities' multi-year DSM plans. (2012)
- ***Regulatory Assistance Project – Global.*** Assisted RAP in framing several global research reports. Co-authored the first report – an extensive "best practices guide" on government policies for achieving energy efficiency objectives, drawing on experience with a variety of policy mechanism employed around the world. (2011)
- ***Tennessee Valley Authority.*** Assisted CSG team providing input to TVA on the redesign of its residential efficiency program portfolio to meet aggressive new five-year savings goals. (2010)
- ***Efficiency Vermont.*** Oversaw residential program planning, input to the VT Department of Public Service on evaluation planning, input to NEEP's regional EM&V forum, and development of M&V plan and other aspects of bids of efficiency resources into New England's Forward Capacity Market (FCM) from March 2000 through Spring 2010.
- ***Ohio Public Utilities Commission.*** Senior Advisor to a project to develop a web-based Technical Reference Manual (TRM). The TRM includes deemed savings assumptions, deemed calculated savings algorithms and custom savings protocols. It was designed to serve as the basis for all electric and gas efficiency program savings claims in the state. (2009 to 2010)
- ***New Jersey Clean Energy Program.*** Oversaw support of Honeywell-led team delivering all statewide residential efficiency and renewable energy programs. Led work on program design, regulatory filings, savings algorithms, and evaluation planning. (2006 to 2010)
- ***New York State Energy Research and Development Authority (NYSERDA).*** Led several analyses of residential electric and gas efficiency potential (over 20 years) for New York State. Scenarios included continuation of existing initiatives, new budget constraints and a least-cost approach to meeting greenhouse gas emission reduction targets. (2001 to 2010)
- ***Long Island Power Authority Clean Energy Plan.*** Led team that designed the four major residential programs (three efficiency, one PV) incorporated into the plan in 1999. Oversaw extensive technical support to the implementation of those programs. This involved assistance with the development of goals and budgets, development of savings algorithms, cost-effectiveness screening, and on-going program design refinements. (1998 to 2009)

SELECTED PUBLICATIONS

- "The Next Quantum Leap in Efficiency: 30% Electricity Savings in Ten Years", published by the Regulatory Assistance Project, February 2016 (with Jim Grevatt)
- "Energy Efficiency as a T&D Resource: Lessons from Recent U.S. Efforts to Use Geographically Targeted Efficiency Programs to Defer T&D Investments", published by Northeast Energy Efficiency Partnerships, January 9, 2015 (with Jim Grevatt)
- "Unleashing Energy Efficiency: The Best Way to Comply with EPA's Clean Power Plan", Public Utilities Fortnightly, October 2014, pp. 30-38 (with Tim Woolf, Erin Malone and Robin LeBaron)
- "The Resource Value Framework: Reforming Energy Efficiency Cost-Effectiveness Screening", published by the National Efficiency Screening Project, August 2014 (with Tim Woolf et al.)
- "Energy Efficiency Participation in Electricity Capacity Markets – the US Experience", published by the Regulatory Assistance Project, August 2014, (with Richard Cowart).
- "Alternative Michigan Energy Savings Goals to Promote Longer-Term Savings and Address Small Utility Challenges", prepared for the Michigan Public Service Commission, September 2013 (with Optimal Energy)
- "An Energy Efficiency Feed-in-Tariff: Key Policy and Design Considerations", 2013 ECEEE Summer Study Proceedings, pp. 305-315 (with Richard Cowart)
- "U.S. Experience with Efficiency as a Transmission and Distribution System Resource", published by the Regulatory Assistance Project, February 2012 (with Rich Sedano)
- "Achieving Energy Efficiency: A Global Best Practices Guide on Government Policies", published by the Regulatory Assistance Project, February 2012 (with Nancy Wasserman)
- "Residential Efficiency Retrofits: A Roadmap for the Future", published by the Regulatory Assistance Project, May 2011 (with Meg Gottstein and Blair Hamilton)
- "Is it Time to Ditch the TRC?" Proceedings of ACEEE 2010 Summer Study on Energy Efficiency in Buildings, Volume 5 (with Marty Kushler).
- "Energy Efficiency as a Resource in the ISO New England Forward Capacity Market", in *Energy Efficiency*, published on line 06 June 2010 (with Cheryl Jenkins and Shawn Enterline).
- "Shareholder Incentives for Gas DSM: Experience with One Canadian Utility", Proceedings of ACEEE 2004 Summer Study Conference on Energy Efficiency in Buildings, Volume 5 (with Kai Millyard).