The Role of Strategic Environmental Assessments in Improving the Governance of Emerging New Industries: A Case Study of Wind Developments in Nova Scotia

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This article explores the potential for strategic environmental assessments to enhance project decisions in the wind energy sector in Nova Scotia. It does so by taking a retrospective look at wind energy project decisions in Nova Scotia in the past 15 years, decisions that have been made in the absence of a strategic environmental assessment. The study considers both individual project approvals and two contrasting municipal responses to the emergence of the industry. The aim of the retrospective is to identify the key challenges this new industry has faced in establishing itself in Nova Scotia. The article then considers, based on SEA literature and experience elsewhere, to what extent the challenges identified could have been avoided or reduced through the implementation of a strategic environmental assessment in the early stages of the emergence of this industry in Nova Scotia. The article concludes with some lessons for the design and implementation of strategic environmental assessments in light of the findings from the Nova Scotia case studies.

Cet article étudie le potentiel qu'ont les évaluations environnementales stratégiques afin d'améliorer le processus décisionnel du secteur de l'énergie éolienne de la Nouvelle-Écosse. Pour ce faire, il pose un regard rétrospectif sur les décisions prises lors des quinze dernières années dudit secteur, décisions adoptées en l'absence d'une évaluation environnementale stratégique. L'étude couvre autant les projets individuels que deux approches municipales contrastées à l'émergence de l'industrie. L'objectif de cette rétrospective est d'identifier les défis clés auxquels cette nouvelle industrie a fait face en s'établissant en Nouvelle-Écosse. L'article explique, en se basant sur la littérature et les expériences étrangères en lien avec les évaluations environnementales stratégiques, dans quelle mesure les défis identifiés auraient pu avoir été évités ou réduits par l'implantation de l'évaluation environnementale stratégique au début de l'émergence de cette industrie en Nouvelle-Écosse. L'article offre ses recommandations pour la conception et l'implantation de l'évaluation environnementale stratégique à la lumière des résultats provenant de l'étude de cas de la Nouvelle-Écosse.

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1. INTRODUCTION

Strategic Environmental Assessments (SEAs) have long been identified in the academic literature as an important tool for improving the efficiency, effectiveness, and fairness of environmental assessment processes (EAs).[1] SEAs can improve the efficiency of EAs by dealing with generic and high level policy issues before individual projects are proposed and designed, allowing developers to avoid problems and streamlining the project EA and regulatory process. They can improve the effectiveness of EAs and project approvals by ensuring decisions at the project level are made within an appropriate policy context. Finally, SEAs can improve the fairness of EAs and regulatory processes by ensuring those potentially affected by proposed projects are engaged early on and have the opportunity to contribute to shaping the policy context within which individual projects are considered.

It is not surprising, given the promise of SEAs, that there have been calls for the integration of SEAs into environmental assessment processes in Canada for almost two decades, some

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[1] See e.g. Meinhard Doelle, *The Federal Environmental Assessment Process: A Guide and Critique* (Markham, ON: LexisNexis-Butterworths, 2008) at 29 [Doelle, *EA Guide*]; Stephen Hazell & Hugh Benevides, "Federal Strategic Environmental Assessment: Towards a Legal Framework" (1997) 7 J Envtl L & Prac 349. See also F Bram Nobel & Jill Harriman Gunn, "Strategic Environmental Assessment" in Kevin S Hanna, ed, *Environmental Impact Assessment: Practice and Participation* (Oxford: Oxford University Press, 2005) 103.

with concrete proposals on how to integrate SEAs into existing decision making processes.[2] A broad range of parties involved in EAs, including industry, First Nations, and environmental organizations support SEAs.[3] There have been concrete proposals to carry out SEAs in a variety of contexts.[4] Furthermore, experiments with SEA-type processes, many of which have been studied, show much promise.[5] Nevertheless, jurisdictions in Canada have been slow to embrace the formal integration of SEAs into their EA processes.

Much of the research on SEAs in Canada has either been conceptual, or it has considered experience with SEAs in the context of a particular SEA process. In this study, we have taken a different approach. We look back at an established industry sector in Nova Scotia, wind energy, to consider how it has been affected by the absence of a provincial SEA to date. In this article, we consider how the project based EA process currently applies to the wind energy sector, what issues are most frequently raised in the EA process, and how two regions of the province have responded to the industry in the face of local opposition and in the absence of a SEA process to provide an opportunity for the interested public and key stakeholders to engage in a mutual learning process to better understand the important policy objectives of wind energy development, as well as the conditions under which wind energy projects can make an overall positive contribution to sustainable energy in Nova Scotia while minimizing social and

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2 See e.g. House of Commons, Standing Committee on Environment and Sustainable Development, Sustainable Development and Environmental Assessment: Beyond Bill C-9 (June 2003), online: <cmte.parl.gc.ca/Content/HOC/committee/372/envi/reports/rp1032309/envirp02-e.pdf>; Government of Canada, Government Response to the Report of the House of Commons Standing Committee on Environment and Sustainable Development, Sustainable Development and Environmental Assessment: Beyond Bill C-9 (October 2003), online: <www.parl.gc.ca/HousePublications/Publication.aspx?Language=E&Mode=1&Parl=37&Ses=2&DocId=1140712&File=0> [Government Response]; Robert Gibson et al, "Strengthening Strategic Environmental Assessment in Canada: An Evaluation of Three Basic Options" (2010) 20:3 J Envtl L & Prac 175 [Gibson et al]; House of Commons, Standing Committee on Environment and Sustainable Development, Statutory Review of the Canadian Environmental Assessment Act: Protecting the Environment, Managing Our Resources (March 2012) (Chair: Mark Warawa).

3 *Government Response, supra note 2*; see also Doelle, *EA Guide*, *supra* note 1.

4 See e.g. Aboriginal Affairs and Northern Development Canada, *Beaufort Regional Environmental Assessment*, online: BREA <www.beaufortrea.ca>; Environmental Commissioner of Ontario, "The Big Picture: Regional Strategic Environmental Assessment in the Ring of Fire", in Serving the Public: Annual Report 2012/2013 (Toronto: ECO) at 72-75, online: <www.eco.on.ca/uploads/Reports-Annual/2012_13/13ar.pdf>; Office of the Auditor General of Canada, "Chapter 2—Assessing Cumulative Environmental Effects of Oil Sands Projects", in *2011 October Report of the Commissioner of the Environment and Sustainable Development*, online: Office of the Auditor General of Canada <www.oag-bvg.gc.ca/internet/English/parl_cesd_201110_02_e_35761.html>.

5 See e.g. Offshore Energy Research Association of Nova Scotia, *Tidal Energy: Strategic Environmental Assessment Update for the Bay of Fundy Tidal Final Report,* 2008 and 2014 update, online: OERA <www.oera.ca/marine-renewable-energy/strategic-environmental-assessment>; Government of Saskatchewan, *Great Sand Hills Regional Environmental Study: Final Report, 2007-014*, (Saskatchewan: Ministry of Environment, 2007), online: Government of Saskatchewan <www.environment.gov.sk.ca/GreatSandHillsRegionalEnvironmentalStudy>; Canada-Nova Scotia Offshore Petroleum Board, "Public Registry: SEA", online: CNSOPB <www.cnsopb.ns.ca/environment/environmental-assessments/sea-public-registry>.

environmental impacts. We then consider what lessons Nova Scotia's experience with wind developments has to offer for the design and implementation of SEAs of wind energy, and of emerging industry sectors more broadly.

We proceed with our investigation in four parts. Part I offers a brief overview of the law and policy context within which the wind energy industry finds itself in Nova Scotia. We then consider how decisions about individual proposals for wind developments have been reviewed and approved in Nova Scotia, by assessing the provincial project EA process carried out for wind developments. In Part III, we consider how two municipalities in Nova Scotia, Kings County and the Halifax Regional Municipality, have dealt with the promise and controversies surrounding wind developments within their respective jurisdictions. The case studies demonstrate the social licence challenge associated with failing to deal with issues proactively before individual projects are proposed and show two very different responses to the challenge this created for municipal decision-makers. In Part IV, we draw on nine principles of good SEAs from the literature to reflect on the experience in Nova Scotia of making decisions about individual wind developments in the absence of a provincial level SEA. Based on this reflection, we consider what lessons the experience with wind development in Nova Scotia offers for the design and implementation of SEAs.

Our starting assumption is that there are good public policy reasons to encourage wind development in Nova Scotia. They include energy security, reduction in greenhouse gas (GHG) emissions and air pollution, price stability, and employment opportunities. As with all human activities, we also assume that there will be negative impacts, risks, and uncertainties associated with wind developments. An effective governance approach will endeavour to minimize these, while also ensuring that projects are only approved if they offer net long-term benefits, and strive to gain public support or social licence for individual projects and for the industry as a whole. We also assume that there will be design and siting choices that will affect whether wind development is appropriate and take into account the net sustainability benefit associated with individual projects.

2. POLICY CONTEXT

In recent years, Nova Scotia has embraced renewable energy and has adopted policies and legislation that are moving the province away from carbon-based electricity towards "greener, more local sources".[6] Part of the motivation for this shift in policy is clearly economic, fuelled by concerns about volatile international fuel prices, limited local sources of fossil fuels, market instability, and energy insecurity. There is, however, also a growing recognition of the environmental harm caused by the use of fossil fuels to generate electricity, both in terms of pollution and the generation of GHG emissions.[7] The various laws and policies designed to embrace renewable energy have served in turn to motivate considerable wind developments throughout the province over the past ten years.

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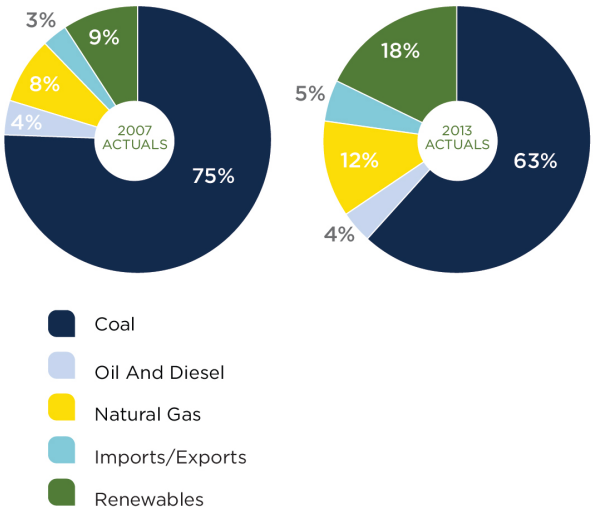
6 Nova Scotia Department of Energy, Renewable Electricity Plan: A Path to Good Jobs, Stable Prices, and a Cleaner Environment, (Nova Scotia: 2010) at 2, online: Department of Energy <energy.novascotia.ca/sites/default/files/renewable-electricity-plan.pdf> [Renewable Electricity Plan].

7 *Ibid* at 5.

Energy Mix in Nova Scotia



Source: Nova Scotia Power, "Energy Sources" (Nova Scotia: 2014), online: Nova Scotia Power <http://tomorrowspower.ca/irp/energy-sources>.

The regulatory context for wind energy development in Nova Scotia is made up of a patchwork of legislation, policies, and regulations. Nova Scotia has adopted "aggressive renewable energy targets"[8] which have been translated into legislation and regulations, and which have already had an impact on the province's energy mix. In 2007, 75 percent of Nova Scotia's electricity was generated using coal. This fell to 63 percent in 2013. Over the same period, the portion of electricity generated from renewable resources rose from 9 percent to 18 percent.[9] Wind energy alone contributed 9 percent of Nova Scotia's energy mix in 2013.[10] The province has made concerted efforts in recent years to encourage the development of wind energy, which is considered to be the mainstay of the province's endeavours to meet its renewable energy targets.[11]

The *Renewable Electricity Regulations*[12] and related legislation required that 25 percent of the province's electricity come from renewable resources by 2015, with the target rising to 40 percent by 2020.[13] Since 2010, when the current Renewable Energy Standards were introduced, numerous policies and programmes have been implemented in support of the province's *Renewable Energy Plan*, and their impact is already being felt. Nova Scotia is set to exceed its 2015 targets for renewable energy, with renewable energy already accounting for 18

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8 Halifax Regional Municipality, *Regional Municipal Planning Strategy* (2014) at 39, online: Halifax Regional Municipality <www.halifax.ca/regionalplanning/documents/RMPS2014.pdf> [MPS 2014].

9 Nova Scotia Power, "Energy Sources", (Nova Scotia: 2014), online: Nova Scotia Power <tomorrowspower.ca/irp/energy-sources>.

10 Nova Scotia Power, "How we Make Electricity", (Nova Scotia: 2014), online: Nova Scotia Power <www.nspower.ca/en/home/about-us/how-we-make-electricity/default.aspx>.

11 *Renewable Electricity Plan*, *supra* note 6 at 16.

12 Renewable Electricity Regulations, NS Reg 155/2010.

13 *Renewable Electricity Plan*, *supra* note 6.

percent of energy production in the province in 2013.[14] The growth of wind energy is largely responsible for the progress made towards these targets. Since 2010, twenty-seven wind farm developments have received approval following environmental assessments. Of the first eight projects to receive EA approval in 2014, seven have been wind farm developments.[15] Another three wind projects are under review at the time of writing.[16] Nova Scotia currently has an installed wind capacity of 335.8MW[17] and it is estimated that projects already approved will reach the grid's projected technical limit of 500MW by 2015, after which significant investments in the grid may be needed before more electricity from wind can be accommodated.[18]

Although wind energy has been embraced at the provincial level and several programs have been implemented to encourage its development, opposition to wind farms has been growing in certain parts of Nova Scotia. At the same time, there has been a subtle shift in the emphasis of government policy in the last few years, with focus seeming to move from wind energy to the development of tidal energy,[19] and fewer applications being approved by programs designed to encourage community-based wind development.[20] The reasons for this shift are complex. There appears to be a desire to diversify the sources of renewable energy in the province, and a feeling that wind energy no longer requires as much government support as it is now a sufficiently established industry. Furthermore, Nova Scotia Power Inc. (NSPI) has raised concerns relating to technical issues and the variability of wind energy.[21] The expected availability of hydroelectric power from Muskrat Falls in Labrador could be seen by decision-makers as a way to meet existing renewable energy and greenhouse gas emission targets, rather than as an opportunity to integrate more wind into the energy mix in Nova Scotia. It is not clear to what extent the social licence challenge the wind industry is facing in Nova Scotia is contributing to this apparent shift in government policy.

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14 Brett Ruskin, "Nova Scotia Set to Exceed Renewable Energy Targets: Minister", Global News (27 January 2014), online: Global News <globalnews.ca/news/1108849/nova-scotia-set-to-exceed-renewable-energy-targets-minister/>.

15 Nova Scotia Environment, "Projects – Completed Reviews" (23 May 2014), online: Nova Scotia Environment <www.novascotia.ca/nse/ea/projects.asp?display=complete&x=20&y=15>.

16 Nova Scotia Environment, "Projects – Projects Under Review" (23 May 2014), online: Nova Scotia Environment <www.novascotia.ca/nse/ea/projects.asp?display=review&x=55&y=12> [NS Environment, "Projects Under Review"].

17 Canadian Wind Energy Association, "Installed Capacity" (May 2014), online: Can WEA <canwea.ca/wp-content/uploads/2014/05/Canada-Current-Installed-Capacity_e.pdf>.

18 Nova Scotia Department of Energy, "Wind Energy in Nova Scotia" (2014), online: Nova Scotia Department of Energy <energy.novascotia.ca/renewables/wind-energy>.

19 Nova Scotia Department of Energy, "Nova Scotia Marine Renewable Energy Strategy" (May 2012), online: Nova Scotia Department of Energy <gov.ns.ca/energy/resources/publications/Nova-Scotia-Marine-Renewable-Energy-Strategy-May-2012.pdf>.

20 Nova Scotia Department of Energy, News Release, "Community Feed-In-Tariff Program Results Available", (6 March 2014), online: Nova Scotia Department of Energy <novascotia.ca/news/release/?id=20140306001> [NS Energy, "COMFIT Results"].

21 GE Energy Consulting, *Final Report: Nova Scotia Renewable Energy Integration Study* (28 June 2013) at 43–69, online: Nova Scotia Power <www.nspower.ca/site/media/Parent/2013COSS_CA_DR-14_SUPPLEMENTAL_REISFinalReport_REDACTED.pdf>.

3. THE EA PROCESS

The primary decision making tool for wind developments in Nova Scotia to date has been the provincial environmental assessment process. The process allows for the assessment of policies, plans and programs, but has to date not been applied to carry out a SEA of Nova Scotia's energy or renewable energy policy. It has, however, been applied to all major wind developments. In the following section, we outline the key elements of the process.

3.1. Elements of the EA process

The EA process in Nova Scotia is governed by the *Nova Scotia Environment Act, Part IV*[22] and the *Environmental Assessment Regulations,*[23] which are administered by the Environmental Assessment Administrator. The main steps in the EA process for wind projects include a project registration requirement, a review of the registration documents by government departments and members of the public, followed by a decision about the need for further assessment in the form of either a focus report or a full environmental assessment with the possibility of public hearings. Most wind projects have been approved without a full environmental assessment or a public hearing.[24]

All wind developments with a production rating of at least 2 MW are required to submit environmental assessment registration documents to be reviewed by Environment Nova Scotia.[25] The proponent is required to provide a wide range of information in the registration documents, including a description of what exists on-site and what is being proposed, identification of any potential environmental, economic and social impacts of the proposed project and a description of proposed mitigation measures and monitoring programs.[26] Although the specific Valued Environmental Components (VECs) that are identified for each project will depend on the local environment and the scale of the proposed project, certain overarching categories must be considered for each project. These include fauna and flora species and habitat, bird and fish habitat, surface and ground water, wetlands, geology, impact on socio-economic factors, etc. Other information that the proponent is required to provide, under section 9(1A) of the *Environmental Assessment Regulations*, includes the purpose and need for the undertaking, proposed construction and operation schedules, environmental baseline information as well as all steps taken or proposed by the proponent to identify and

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22 *Environment Act*, RSNS 1994–95, c 1.

23 *Environmental Assessment Regulations,* NS Reg 26/95 [EA Regulations].

24 Conclusion based on authors' review of EAs conducted for wind projects registered in Nova Scotia. EAs are available at Nova Scotia Environment, "Projects", (23 May 2014), online: Nova Scotia Environment <www.novascotia.ca/nse/ea/projects.asp>.

25 *Supra* note 23, s 3(1)(D)(2)(b).

26 Nova Scotia Environment, Policy and Corporate Services Division Environmental Assessment Branch "Proponents' Guide to Wind Power Projects: Guide for Preparing an Environmental Assessment Registration Document" (May 2007, updated January 2012), online: Nova Scotia Environment <www.gov.ns.ca/nse/ea/docs/EA.Guide-Proponents-WindPowerProjects.pdf> [NS Environment "Proponents' Guide"].

address the concerns of the public and First Nations, as well as a list of approvals and other forms of authorization that will be required.[27]

Approval is required before construction of a project can begin, and will generally be conditional on elements such as obtaining additional approval from other government departments, and the implementation of monitoring and reporting systems to measure the impact of the project on wildlife and birds. While most proposed projects have been approved with conditions, some have been referred back to the proponent with a request for additional information where the details contained in the environmental assessment are found to be insufficient.[28]

Once registration documents are received by Nova Scotia Environment, the department sends them out to other government departments and agencies for comments and feedback. This is independent from any regulatory permitting or approval process that the various departments may have in place, although the comments received from regulators may be incorporated into conditions of the EA approval. The public is also given the opportunity to comment on the project. The Minister takes these comments, as well as any steps taken by the proponent to address the issues raised, into consideration when determining whether and under what conditions to approve a project. The proponent decides when and how the public is engaged,[29] although a condition of approval may be that the proponent further engages with a particular community or to develop public engagement strategies and mechanisms. This is a common condition with respect to First Nations communities.[30]

The Minister's decision to approve or reject a project is based on an assessment of the location of the proposed undertaking, the nature and sensitivity of the surrounding area, the size, scope and complexity of the proposed undertaking, and concerns expressed by the public and First Nations about the proposed undertaking. The Minister must also consider any steps taken by the proponent to address environmental concerns expressed by the public and First Nations, and whether or not the environmental baseline information submitted is sufficient to predict adverse effects.[31] A holistic approach must be used when considering factors such as planned or existing land use, the existence of any other undertaking in the area surrounding the proposed wind turbine,[32] as well as socio-economic issues that include transportation, recreation, tourism and the effects on the physical and cultural heritage of the project area.[33]

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27 *Supra* note 23, s 9(1A).

28 This was the case for the Lingan Wind Farm Expansion proposal and the Wedgeport Wind Farm Project. See e.g. NS Environment, "Projects Under Review", *supra* note 16.

29 NS Environment "Proponents' Guide", *supra* note 26 at 11.

30 See Letter from Sterling Belliveau, Nova Scotia Minister of Environment, to David Eva of SP Development Limited Partnership (13 August 2012) in "Minister's Decision" on Lingan Wind Farm Expansion (Lingan III), online: Nova Scotia Environment <www.gov.ns.ca/nse/ea/lingan.wind.farm.expansion/MinDecision.pdf> [Belliveau to Eva].

31 *Supra* note 23, s 12(c), (da).

32 *Ibid,* s 12.

33 NS Environment "Proponents' Guide", *supra* note 26 at 15.

3.2. Regulatory Context

Regardless of whether or not EA approval is granted or even required, proponents still have to apply for the relevant permits and licenses from various other departments before commencing construction. These depend on the type of work being done, as well as the location and the environment affected. For example, if the development of wind turbines will impact upon wetlands, it may be necessary to obtain a Wetland Alteration Approval from Nova Scotia Environment.[34] Alternatively, if it is necessary to travel or move equipment through forest land under Crown control that is subject to a travel ban, the proponent will need permission from the Department of Natural Resources.[35] It may also be necessary to obtain permits in order to transport heavy or abnormally shaped loads during the construction phase.[36]

The Nova Scotia government has introduced programs designed to encourage certain groups to become more involved in the production of renewable energy in the province. In 2011, the Community Feed-In Tariff Program (COMFIT) was introduced as part of the *Renewable Electricity Plan*. The aim of the program is to "ensure that projects are rooted in the community and investment returns remain there."[37] The program establishes uniform feed-in tariffs, which are set by the Utility Review Board, and is intended to encourage community support and engagement in renewable energy. The initial target for COMFIT was to approve projects with a total capacity of 100MW. As of January 2014, COMFIT had approved a total of eighty-nine projects with a combined capacity of close to 280 MW.[38] However, without a larger strategic framework to guide the approval of projects, COMFIT has encountered several problems, which led to the program's reform in 2014.[39]

Participation in COMFIT is restricted to certain community-based groups, such as municipalities, First Nations, co-operatives, and not-for-profit groups. Partnerships with some private sector actors are allowed, but the community group proposing the project has to maintain a 51 percent stake in any project.[40] In order to be eligible for COMFIT, the project not only has to be proposed by an eligible group, but also has to be a new project, an approved source of renewable energy (i.e. wind, biomass, tidal, or hydro) and connected to the distribution grid.

The Nova Scotia government launched a review of the COMFIT program in 2012, the results of which were announced in 2014.[41] Concerns were raised in the review about the technical feasibility and cost effectiveness of integrating COMFIT projects into the province's

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34 *Activities Designation Regulations,* NS Reg 47/95, s 5A(2)(c).

35 *Forests Act*, RSNS 1989, c 179, s 25.

36 *Motor Vehicle Act*, RSNS 1989, c 293, s 191.

37 Nova Scotia Department of Energy, "Wind Tool Kit" (2012) at 17, online: Department of Energy <nsrenewables.ca/sites/default/files/wind_tool_kit_final.pdf> [NS Energy, "Wind Tool Kit"].

38 NS Energy, "COMFIT Results", *supra* note 20.

39 Nova Scotia Department of Energy, "Report on the Review of the Community Feed-In-Tariff Program" (March 2014), online: Department of Energy <energy.novascotia.ca/sites/default/files/a_comfit_review_report_march_2014.pdf> [NS Energy, "COMFIT Review Report"].

40 NS Energy, "Wind Tool Kit", *supra* note 37 at 19.

41 NS Energy, "COMFIT Review Report", *supra* note 39.

power grid, and about the level and nature of community support for the projects. Some of those consulted during the review raised the issue that the program was losing its community focus, with some community groups entering into partnerships with private organizations and proposing more than one project per community.[42] The review has led to some changes to the COMFIT program, which largely serve to limit its role. At present, no new entities or technologies are being approved by COMFIT as the focus has shifted to providing more support to projects that have already been approved. No new applications for large biomass or wind projects of more than 500KW will be accepted, and projects for all sources of renewable energy under COMFIT have been limited to a maximum of 500KW.[43] The changes seem to be aimed at returning COMFIT's focus to the community level, with smaller projects and more emphasis on community support and consultation.[44]

In order to make renewable energy production more economically attractive, the Nova Scotia government introduced the *Electricity Reform (2013) Act*[45] in December 2013 and announced the Electricity Review Process in January 2014. The *Electricity Reform Act* introduces changes to the *Electricity Act*[46] that would open up the electricity market to limited competition and allow renewable low-impact electricity producers to sell directly to end-users. Regulations created under the Act are intended to support "domestically produced, low-impact renewable electricity such as wind."[47] Under the legislation, the Nova Scotia Utility and Review Board will be responsible for developing and implementing a licensing regime for any renewable energy suppliers who wish to sell directly to the public. As the legislation only entered into force in March 2014, it is too early to tell what impact it will have on renewable energy production in the province, and whether or not it will actually create new market opportunities for producers and encourage more investment in wind developments.

3.3. Recent trends and developments in environmental assessments in Nova Scotia

As part of our research, we have reviewed all wind project EAs in Nova Scotia to explore the concerns raised by government reviewers and intervenors and the extent to and manner in which the concerns were addressed within the project EA process. The purpose of this research was to determine whether issues raised at the project EA stage could have been more efficiently or effectively addressed proactively through a SEA, and whether the failure to address the issues proactively resulted in opposition at the project level.

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42 NS Energy, "COMFIT Results", *supra* note 20.

43 NS Energy, "COMFIT Review Report", *supra* note 39.

44 Nova Scotia Department of Energy, "Community Support and Consultation for COMFIT Projects" (March 2014), online: Nova Scotia Department of Energy <energy.novascotia.ca/sites/default/files/a_community_support_policy_comfit_mar2014.pdf> [NS Energy, "Community Support and Consultation"]

45 *Electricity Reform Act*, RSNS 2013, c 34.

46 *Electricity Act*, RSNS 2004, c 25.

47 Nova Scotia Department of Energy, News Release, "Electricity Reform Act to Transform Electricity Marketplace" (29 November 2013), online: Nova Scotia Department of Energy <novascotia.ca/news/release/?id=20131129001>.

Many of the key issues raised in recent project EAs cannot be considered "new" as they have been raised in previous project EAs. Conducting a strategic environmental assessment as the wind industry began to develop in Nova Scotia could have helped to identify the key issues that have arisen in most projects and served to develop strategic ways to address them, providing a framework for decisions at the project level. Although the importance attached to certain concerns can vary geographically and between the various stakeholders of each project, a strategic assessment of the environmental issues associated with wind development in Nova Scotia would help to develop strategies to maximize benefits, minimize risks, and ensure net long-term benefits across the province.

The potential impact of wind developments on human health is one of the concerns that have come to the fore in recent years. Health concerns and the perceived lack of knowledge about the potential impacts of wind developments on humans was one of the driving concerns behind the moratorium that was imposed in Kings County.[48] Preliminary results of a recent Health Canada study into the issue have found that while there is some evidence, based on self-reporting, that suggests a potential link between health and long term annoyance due to wind turbine noise, this is not borne out by objectively measured results.[49] While the results of the study are not currently considered final[50], there appears to be some level of disconnect between the concern about health risks related to wind energy in some parts of the province and the scientific evidence as to the actual impacts of wind turbines on human health. Concerns relating to the health impacts of wind developments are not consistent, and do not appear to be a uniform worry. Few public comments on project EAs raise the issue and whilst Health Canada and Nova Scotia Health have pointed to concerns about noise levels and shadow flicker for some projects, there is no mention of any potential health risks that remain to be determined and no suggestion of adopting a precautionary approach based on health concerns. Early identification of these concerns within the context of a SEA would not have made these concerns disappear. However, it could have resulted in a constructive discussion on how to fill the knowledge gap about these concerns and how to proceed with wind developments in a precautionary manner while taking steps to fill the knowledge gaps.

The proximity of wind developments to residential areas is another issue that has been raised in public comments on various project EAs. This was a particular concern in Pugwash, where a very organized and vocal public opposed the proposed Pugwash Wind Farm. Of over 300 public comments received, one of the key concerns raised by the majority of commentators was the location of the development and its proximity to residences. This particular apprehension related to a wide scope of issues, including the impact on property values, possible health implications, noise and visual impacts in an area that relies heavily on cottage industries and tourism.[51]

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48 See, in this article, the section on Kings County case study in Part IV. Municipal Case Studies.

49 Health Canada, "Wind Turbine Noise Health Study: Summary of Results", online: Health Canada <www.hc-sc.gc.ca/ewh-semt/noise-bruit/turbine-eoliennes/summary-resume-eng.php> [Health Canada].

50 Health Canada states that the results will only be considered final following peer-review and publication in the scientific literature. *Ibid*, n 2.

51 Letter from Dr Paul Downing, resident, to Sterling Belliveau, Nova Scotia Minister of Environment (4 March 2012), submitted as part of public consultation on environmental assessment of Pugwash

The concern over windmills negatively impacting tourism is not a universal worry throughout Nova Scotia, however, with the Nova Scotia Department of Economic and Rural Development and Tourism stating that "wind turbines are not expected to have any significant negative impact on tourism or recreation" when asked for comments on the Kaizer Meadow Wind Project.[52] Similarly, the Department had no concerns with regards to noise or aesthetics over the South Canoe Wind Farm.[53]

The broad range of concerns related to the location of windfarms certainly could have been addressed in the context of a SEA. Experience suggests that opposition to projects is greatest when projects are proposed without any prior consultation on when, where and under what conditions they may be appropriate.[54] A SEA could have taken each of the concerns identified in these project EAs, studied the state of knowledge on each of these issues, and proposed some general guidance on how to translate each of these concerns into appropriate decisions about siting of wind projects, such as separation distances.

In 2012, the Nova Scotia Minister of the Environment asked proponents of two different wind developments to engage in a discussion on the viability of new projects and the applicable schedules with regards to integration into the Nova Scotia Power grid.[55] As of August 2012, the Renewable Energy Administrator had announced all of the successful projects that had been selected following the Nova Scotia Department of Energy's Request for Proposals (RFP) for the procurement of 300 GWh of renewable energy from Independent Power Producers (IPPs). It is anticipated that these projects will bring the amount of wind energy produced up to the expected technical limit of the province's electrical grid.[56] In 2012, proponents of the two separate projects were asked to provide an assessment of their proposed projects' viability in light of the technical constraints on the integration of wind energy into the Nova Scotia grid. However, the EAs for the most recent wind projects to receive approval in July 2013 did not include any such conditions or mention of project viability. This requirement appears only to have been imposed as a condition for approval in two cases (Lingan and Wedgeport), and has yet to be translated into a factor for automatic consideration in project EAs.

A SEA could have identified the technical limit concerns and initiated an independent study to confirm the current technical limits in terms of the energy mix and the grid infrastructure. Such a study could also have helped to identify the most effective ways of identifying them, including the potential role of smart grid technology, demand management, compatible energy

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Wind Farm, Nova Scotia Environment Library.

52 Letter from Elizabeth Haggart, Nova Scotia Department of Economic and Rural Development and Tourism, to Steve Sanford (17 August 2012) in response to request for comments on Kaizer Meadow Wind Project, Nova Scotia Environment Library.

53 Letter from Denise Blanchard-Carpentier, Nova Scotia Department of Economic and Rural Development and Tourism to Steve Sanford (25 June 2012) in response to request for comments on South Canoe Wind Farm, Nova Scotia Environment Library.

54 See e.g. Doelle, *EA Guide*, *supra* note 1.

55 See Belliveau to Eva, *supra* note 30. See also Letter from Sterling Belliveau, Nova Scotia Minister of Environment, to Chief Terry Paul (15 August 2012) in "Minister's Decision" on Wedgeport Wind Farm Project, online: <www.gov.ns.ca/nse/ea/wedgeport.wind.farm.project/MinDecision.pdf>.

56 *Ibid.*

sources, optimal siting of wind farms, and investment in grid infrastructure. Most importantly, perhaps, good policy requires a combination of accurate technical information and choices about values and priorities. A SEA could have served an important role in ensuring a common understanding of the technical issues among all key stakeholders, and moved key stakeholders closer to a common set of values and priorities, ensuring good decisions about the actual level of wind to be integrated into the Nova Scotia electricity grid over the short, medium and long term.[57]

Finally, the involvement of First Nations is an issue that has been raised in several project EAs in recent years. It is also one that it would have been helpful to have addressed at a strategic level. The type and extent of engagement of Mi'kmaq communities has often been commented on at the project level. Although not specifically required, many proponents have completed Mi'kmaq Ecological Knowledge Studies (MEKS) and have included the results of their EA registration documents. These studies collect and analyze local Mi'kmaq knowledge about the environment, and take into account historical, cultural and spiritual perspectives. The inclusion or lack of MEKS has been commented on by the public in various project EAs (approvingly by the Kwilmu'kw Maw-Klusuaqn Negotiation office (KMKNO)[58] in public comments on the Lingan Expansion EA, disapprovingly by a member of the public commenting on the Barrington Wind Energy Project). The impact of projects on the use and availability of traditional plants has been raised as an issue,[59] as has the disturbance of areas of high archeological potential before a professional qualified archeologist had the opportunity to examine the sites to determine their archeological significance.[60] A SEA could have provided a framework in which to identify and address such issues in a consistent and effective manner.

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57 SEAs that are fully transparent are effective in engaging all key stakeholders and provide a forum for mutual learning and consensus building on values and priorities. They offer the opportunity to build a common vision for an industry sector that is in the best long-term interest of the province. Processes, such as the 2007 Tidal SEA, see Offshore Energy Research Association, Fundy Tidal Energy Strategic Environmental Assessment Final Report (Halifax: April 2008), online: Marine Renewables Canada <www.marinerenewables.ca/wp-content/uploads/2012/11/Fundy-Tidal-Energy-Strategic-Environmental-Assessment-Final-Report.pdf>; or the 2014 Aquaculture Review, see Nova Scotia, Independent Aquaculture Regulatory Review, A New Regulatory Framework for Low-Impact/High-Value Aquaculture in Nova Scotia, by Meinhard Doelle & William Lahey, (Halifax: 2014), online: Doelle-Lahey Panel <www.aquaculturereview.ca/sites/default/files/Aquaculture_Regulatory_Framework_Final_04Dec14.pdf>; in combination with the substantive guidance offered by Environmental Goals and Sustainable Prosperity Act, SNS 2007, c 7, have demonstrated progress in this regard in Nova Scotia.

58 The KMKNO represents the Mi'kmaq of Nova Scotia in negotiations with the Province of Nova Scotia and the Government of Canada about the implementation of treaty rights in the province.

59 Letter from Twila Gaudet, Kwilmu'kw Maw-Klusuaqn Negotiation Office, to Bridget Tutty, Nova Scotia Department of Environment (8 March 2013), submitted as part of public consultation during the environmental assessment of Barrington Wind Energy project, Nova Scotia Environment Library.

60 Letter from Twila Gaudet, Kwilmu'kw Maw-Klusuaqn Negotiation Office, to Jennifer McKeane, Nova Scotia Department of Environment (25 June 2012), submitted as part of public consultation during the environmental assessment of Lingan Wind Farm Expansion, Nova Scotia Environment Library.

Based on our review of wind related project EAs, we conclude that there are numerous issues raised repeatedly at the project EA level that could have been partly or completely addressed within the context of a SEA carried out early in the emergence of the wind energy sector in Nova Scotia. Health concerns, separation distances, technical limitations for the integration of wind, and the need for MEKS all could have been addressed before individual projects were designed and proposed, thus potentially reducing opposition at the project level. More fundamentally, a SEA could have established a clear, common set of values and priorities for wind energy in Nova Scotia and ensured broader support for wind development.

4. MUNICIPAL CASE STUDIES

In this section, we explore the experience of two municipalities that faced opposition to wind developments. In both cases, it is clear that opposition to wind developments grew after individual projects were proposed without first engaging affected communities and other stakeholders in a discussion either about the policy reasons behind wind developments or the potential negative impacts of wind projects. In both cases, public engagement at the project EA stage became adversarial; those concerned about the impact of the projects saw opposition to the project as the most effective way of having their concerns addressed. The opportunity to address concerns while accommodating the projects was lost, resulting in pressure to prohibit wind developments at the municipal government level. This created similar challenges for the municipalities, both of which were initially very supportive of wind projects. As we discuss below, the responses by the two municipalities were quite different. Neither was able, however, to completely undo the damage done by the failure to proactively engage communities and stakeholders well before the first projects were designed and proposed.

Kings County

Recognizing the political, economic and ecological pressures to reduce reliance on fossil fuels within Nova Scotia, and in keeping with the province's renewable energy targets, the Municipality of the County of Kings adopted the *Integrated Community Sustainability Plan* (ICSP) in 2010. Public consultation in the development of the plan indicated that the "facilitation and promotion of renewable energy development was considered a high priority item under both the environmental and economic pillars of sustainability."[61] The development of wind turbines was promoted as a means of reducing reliance on non-renewable energy sources and as a way to generate income locally.[62] At the time, there were no policies or regulations for the development of large-scale wind turbines. Given the interest in developing such projects in the area, the municipal council directed its staff to review and recommend policy options for regulation. The policy and regulations that were adopted in 2011 were seen

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61 Municipality of the County of Kings, "Report to the Planning Advisory Committee Large-Scale Wind Turbine Policy Options – Appendix D", by Leanne Chisholm (27 April 2010) at 2 (Appendix D), online: Kings County Report to PAC at Appendix D at 2 <www.county.kings.ns.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.01.10%20Appendices%20for%20Report%20to%20PAC.pdf>.

62 *Ibid.*

as a reflection of the Council's commitment to the sustainability principles contained in the ICSP, to strengthening the local economy, and to the province's renewable energy targets.[63]

In June 2011, after three years of review, consultation and information-gathering, the Municipality of the County of Kings adopted regulations to encourage the development of large-scale wind farms but committed to review them in January 2012. "Large-scale Wind Turbines" are defined as those with a rated output capacity greater than 100 kilowatts.[64] The regulations allowed for as-of-right permitting for turbines in certain areas and created a 700 meter minimum setback requirement. This meant that any proposed turbines in those areas meeting the requirements were automatically granted permits without further scrutiny. At the time, two projects were in the early approval stages of the province's Community Feed-In Tariff Program when a private developer expressed interest in proposing another turbine in the area.[65] Community concerns were raised about the adequacy of the county regulations once the specific sites for proposed projects became known.[66] Specifically, concerns were raised after a wind-monitoring tower was erected without prior public consultations in the Greenfield area of the county.[67]

The *Municipal Planning Strategy* (MPS) adopted in June 2011 actively sought to encourage the development of large-scale wind turbines as part of a drive to promote renewable energy development, in keeping with the goals laid out in the municipality's ICSP.[68] The MPS also

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63 Municipality of the County of Kings, "Report to the Planning Advisory Committee: Large-Scale Wind Turbine Policy, History, and Options", by Ian Watson and Ben Sivak (10 January 2012), online: Municipality of the County of Kings at 1 <www.county.kings.ns.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.01.10%20Report%20to%20PAC%20no%20appendices.pdf>.

64 Municipality of the County of Kings, by-law No 75, *County of Kings Land Use Bylaw Part 1*, online: Municipality of the County of Kings at 1–35 <www.countyofkings.ca/upload/all_uploads/Residents/planning/lub/sections/section1.pdf>.

65 Municipality of the County of Kings, *Final Report: Health & Safety Impacts from Large-Scale Wind Turbines (P12-01)*, by Janis Rod & Wendy Heiger-Bernays (May 2012), online: Municipality of the County of Kings (Final Report) at 7 <www.countyofkings.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.05.17%20Final%20consultants%20report%20on%20health%20and%20safety.pdf> [Rod & Heiger-Bernays].

66 The Municipality of Kings County, "Report to Municipal Council: Second Reading – Large-scale wind turbines (File P12-01)", (3 July 2012), online: Kings County <www.county.kings.ns.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.07.03%20Second%20Reading%20Report.pdf> [Report to Council – 3 July].

67 The Municipality of Kings County, "Report to Municipal Council: Proposed planning project concerning large-scale wind turbines", (17 January 2012), online: Municipality of the County of Kings (Large-scale wind turbines) at 1 <www.county.kings.ns.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.01.17%20Report%20to%20Council.pdf>.

68 Municipality of the County of Kings, Appendix A: Amendments Bylaw #56 – County of Kings Municipal Planning Strategy (20 June 2012), online: Municipality of the County of Kings (Appendix A), s. 5.5 <www.county.kings.ns.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.06.20%20Public%20Hearing%20Report.pdf>.

recognized the economic benefits of wind turbines for landowners and the municipality, as well as the impact of wind energy on reducing reliance on non-renewable energy sources.[69]

To date, there have been no large-scale wind developments in Kings County.[70] Despite initially adopting a position that encouraged the development of large-scale wind turbines the municipality revised its position in 2012 and imposed a moratorium in the face of very strong public opposition. The moratorium remains in place at the time of writing, and it does not appear that it will be lifted in the foreseeable future. This change in position followed an in-depth review into the development of large-scale wind turbines in Kings County after public concerns were raised about the adequacy of the municipality's policy and regulations.[71] The review was conducted over a number of months in 2012, with several open houses, presentations to council meetings and a special report commissioned on the potential health impacts of wind development. A public questionnaire was answered by nearly 500 county residents.[72] The review considered some of the issues that might potentially be covered by a SEA at a municipal level, from potential health and environmental impacts, to consequences for property values, to the position of the Royal Canadian Air Force.

The review of public feedback shows that most residents who participated in the survey were strongly opposed to the development of large-scale turbines in their municipality, and were generally not swayed by arguments in favour of the turbines.[73] In all, 220 out of 357 respondents felt that the municipality should significantly limit the development of large-scale wind turbines, and many felt that certain specific proposed locations for these turbines were very inappropriate (237 out of 429).[74] The key concerns raised related to noise issues, safety, shadow flicker and wildlife impacts.

In addition, many respondents indicated that whilst they were not opposed to large-scale wind turbines in theory, they wanted larger separation distances. The answers to the survey also suggest a belief that large-scale wind turbines were not the most effective means of renewable energy. Many respondents felt that other options, such as offshore wind, small-scale wind, solar, and tidal energy, were more effective.[75]

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69 *Ibid*.

70 Rod & Heiger-Bernays, *supra* note 65 at 7.

71 Report to Council – 3 July, *supra* note 66.

72 Municipality of the County of Kings, "P12-01: Large-scale Wind Turbines", online: Municipality of the County of Kings <www.county.kings.ns.ca/residents/planning/windturbines.aspx>.

73 Municipality of the County of Kings, "Public Feedback Presentation to PAC", (12 April 2012), online: Municipality of the County of Kings <www.countyofkings.ca/upload/All_Uploads/Residents/Planning/windturbines/Visuals/2012.04.12%20Public%20Feedback%20Presentation%20to%20PAC.pdf>.

74 *Ibid*, slides 21–23.

75 Municipality of the County of Kings, "P12-01: Large-scale Wind Turbine Regulations Review: Public Feedback Report" (12 April 2012), online: Municipality of the County of Kings <www.countyofkings.ca/upload/All_Uploads/Residents/Planning/windturbines/Reports/2012.04.12%20Public%20Feedback%20Report.pdf>. Some of the views expressed clearly are misconceptions about the suitability of these alternatives. These misconceptions could have been explored in the context of a SEA.

The independent expert report on the potential health and safety impacts from large-scale wind turbines recognizes that it is the socio-economic issues, rather than environmental ones, that are often the more controversial with regards to wind energy.[76] According to the study, "the broader issue of perception must be considered. Social consent for a wind energy project has been shown as a key indicator of reported levels of stress and annoyance by wind farm neighbours."[77] Of the numerous issues raised by residents, the report considered four in detail. The most likely impact was audible noise, ice throw, low frequency noise and vibration, and shadow flicker. The report concluded that while some of the potential health impacts experienced are direct, many of those reported are caused indirectly via annoyance, which is highly influenced by the perception of the resident. Therefore, the report concluded that stakeholder engagement is very important,[78] as the

> long-term stress from real or perceived environmental threats can increase risks of negative health effects; this may be exacerbated by community conflict over the wind energy project. Accordingly, public participation, education and community consultation are recommended as they may decrease negative health impacts.[79]

In 2012, following the review, the council voted to amend the MPS and the relevant by-laws, imposing a moratorium on the development of large-scale wind farms within the municipality until more information can be collected about their impacts.[80] The revised MPS no longer refers to complex planning issues related to large-scale wind turbine development and the need to collect/review information and consult with public on this issue.[81] References to the benefits of such turbines have been removed from the document.

Section 5.5 of the MPS, which previously dealt with the siting of large-scale wind turbines, has been replaced by a new section that has a very different emphasis. There has been a shift away from considering large-scale turbines as an important contribution to renewable energy sources, and more attention is now paid to the impacts that these turbines have, or can have, on the surrounding landscape and residents.[82] Land use by-laws have also been amended, with all by-laws referring to the siting of large-scale wind farms having been removed. Large-scale turbines have also been removed from the list of permitted activities in zones in which they had previously been permitted, such as agricultural zones and county residential zones.[83]

The moratorium remains in place at the time of writing, and the issue does not appear to have been raised again in council meetings since 2012. Even the preliminary results from the Health Canada Wind Turbine Noise and Health Study[84] have not prompted movement on the

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76 Rod & Heiger-Bernays, *supra* note 65 at 1.

77 *Ibid* at 3.

78 *Ibid* at 57.

79 *Ibid* at 3.

80 Gordon Delaney, "Kings County puts hold on wind farms", *The Chronicle Herald* (3 July 2012), online: <thechronicleherald.ca/novascotia/113384-kings-county-puts-hold-on-wind-farms>.

81 Report to Council – 3 July, *supra* note 66, Appendix A: Amendments Bylaw #56.

82 *Ibid*.

83 *Ibid*.

84 Health Canada, *supra* note 49.

issue, although this is not surprising given the current opposition to large-scale wind turbines in Kings County.

Opposition to large-scale wind turbine developments does not appear to be a uniform phenomenon across the province, nor is it unique to Kings County. For instance, the Town of Berwick, in Kings County, entered into an inter-municipal partnership with the Towns of Mahone Bay and Antigonish, situated outside the county, to create the Alternative Resource Energy Authority (AREA) in 2014. All of these towns operate their own electricity utilities and distribute power to customers within their respective municipalities. They are currently proposing to build a 16.1 MW wind project in Hants County, and have received approval from the Minister of the Environment, following an EA that was completed in February 2014.[85] There are several conditions that have been placed on the environmental assessment approval,[86] but these appear to be general conditions that are attached to most other projects that receive approval from the Minister.

Although this project is not located in Kings County, it reflects a desire of certain municipalities within the county, such as Berwick, to continue to develop large-scale wind projects, despite the existence of the moratorium. AREA considers wind to be a "valuable emission-free resource" that can be harnessed to help the province achieve its renewable energy targets.[87] Hants County where the proposed project will be located, is more supportive of wind developments than Kings County, having adopted a *Municipal Climate Change Action Plan* (MCCAP) in 2013, which includes objectives of contributing to the growth of a local green economy and reducing greenhouse gas emissions.[88] The District of West Hants entered into a development agreement with AREA in May 2014 to allow for the development of seven large wind turbines, accessory components, and access roads/driveways.[89]

Halifax Regional Municipality (HRM)

The Halifax Regional Municipality (HRM) has been much more consistently receptive to wind energy developments than Kings County, though it has faced similar opposition. The *HRM Regional Municipal Planning Strategy* (MPS) and land use by-laws are designed to encourage the development of wind energy in the municipality, where some community councils have shown a willingness to use their authority to facilitate the construction of turbines within their constituencies. While land use by-laws are somewhat different for each of the

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85 Nova Scotia Environment, "Ellershouse Wind Project" (31 March 2014), online: Department of Environment <www.novascotia.ca/nse/ea/ellershouse-wind-project.asp>.

86 Letter from Randy Delorey, Nova Scotia Minister of Environment, to Jim Wentzel (17 February 2014) in "Minister's Decision and Conditions", Ellershouse Wind Project Environmental Assessment, online: Department of Environment <www.novascotia.ca/nse/ea/ellershouse-wind-farm/decision-conditions.pdf>.

87 Alternative Resource Energy Authority, "Wind Farm Benefits" (2014), online: AREA <www.areans.ca/benefits.html>.

88 Municipality of the District of West Hants, Municipal Climate Change Action Plan (2013), online: West Hants (MCCAP) at 115 <www.westhants.ca/municipal-climate-change-action-plan.html>.

89 Municipality of the District of West Hants, "Notice of Approval: Development Agreement" (13 May 2014), online: Municipality of the District of West Hants <www.westhants.ca/staff-reports.html>.

various districts in the HRM, in general, they all adopt the principles laid out in the regional MPS. Although there is recognition by HRM Council that the development of wind energy is potentially controversial, the opportunity for public comments with regards to specific projects has been limited by the HRM.

The original HRM regional plan was published in 2006, then amended in 2011 to include a section on wind energy. This plan underwent a five-year review and in May 2013 a draft plan was sent for public consultation and comments. HRM Regional Council approved a revised regional plan , which came into force in October 2014. The 2014 plan recognizes the important role that wind energy is expected to play in meeting Nova Scotia's renewable energy targets,[90] echoing the sentiment in the 2006 plan that wind is "an important alternative source of sustainable and secure energy."[91] The 2006 plan considered the potential negative impacts of wind energy development on aesthetics, the landscape, and residents,[92] but such references have been removed in the 2014 plan, which focuses squarely on encouraging the development of wind energy in the HRM.[93] Amendments to the 2006 Regional MPS identified the need for alternative sustainable energy and, more specifically, the creation of new policies for the siting of wind energy facilities in HRM.[94] The 2014 plan develops some of these policies, stating that "wind turbines should be permitted in HRM without placing a limit on the number of wind turbines within a particular location, provided that distance separation requirements can be met."[95] The MPS is intended to be flexible and able to adapt to changes in wind technology and federal/provincial regulation of the industry.[96]

The 2006 MPS suggested that a systems approach be used to address issues and possibilities arising from energy in general, and wind energy in particular, with specific attention paid to assessing the full environmental, social, and economic costs of energy choices.[97] Although the 2006 MPS advocated that this approach be integrated into a Community Energy Functional Plan, designed to guide the management of energy in the HRM, these concepts are not carried through into the 2014 plan.

Amendments made in 2011 to the 2006 MPS created three energy overlay zones (urban, rural, and restricted), each with their own regulations and criteria for the development of wind turbines.[98] These continue to exist under the 2014 plan, and there are no limits on the number of wind turbines that can be placed at one site in the MPS as long as the minimum distance

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90 MPS 2014, *supra* note 8, 39-40.

91 Halifax Regional Municipality, *Regional Municipal Planning Strategy*, May 2010 update (2006), online: <www.ecelaw.ca/index.php?option=com_mtree&task=att_download&link_id=772&cf_id=24> [MPS 2006].

92 *Ibid* at 125.

93 MPS 2014, *supra* note 8 at 39-40.

94 *Ibid* at 126.

95 MPS 2014, *supra* note 8 at 40.

96 *Ibid*.

97 MPS 2006, *supra* note 91 at 126.

98 Halifax Regional Municipality, "Project 00953: Wind Energy Facilities in HRM – Public Engagement – Supplemental Report" (26 September 2011), online: Halifax Regional Municipality <halifax.ca/council/agendasc/documents/111018ca1112i.pdf>, adopting Halifax Regional

separation requirements are respected, although these requirements can be waived in some instances.[99]

Proximity to residential areas is a key criterion for determining where wind turbines can be built. Under the 2006 MPS, no large-scale turbines are permitted in "urban" areas, and all other turbines are restricted to certain areas, such as designated business parks and commercial zones, that are deemed to be sufficiently removed from residential areas and other places where people reside.[100] In rural HRM, turbines of any size can be located almost anywhere as long as they are not in a restricted zone and comply with distance requirements and federal/provincial regulations.[101] Wind turbines are prohibited in restricted zones, which are areas that have been identified as being environmentally sensitive and include provincially protected wilderness areas, regional and provincial parks, and the Western Commons.[102] The 2014 MPS simply states that the HRM will establish "wind energy performance standards and regulations to control height, scale, access, setback and separation distances of such facilities in order to adequately address operational needs, safety concerns and the mitigation of impacts to adjacent properties",[103] although practically any regulations will take into consideration the elements outlined in the 2006 MPS.

Many of the land use by-laws adopted by different districts within the HRM incorporate and expand upon the criteria and regulations laid out for the different energy overlay zones in the 2006 regional MPS. Land use by-laws in Planning District 4, for example, have been amended so that wind turbines are no longer exempt from height restrictions,[104] and there are now criteria that development applications must meet in order to be approved (e.g. colour and finish of turbines, no artificial lighting allowed except as required for flight safety, etc.).[105] In addition, certain areas have been rezoned in order to allow for wind turbines to be built on private land. In 2012, the Western Region Community Council voted to amend land use by-laws in order to rezone Crown property so as enable the use of an existing access driveway for large-scale wind turbine development on private land in Terence Bay.[106] Both properties are within the Rural Wind overlay zone, which allows the development of wind turbines on an as-of-right permitting basis, but the access road on Crown land was zoned as a conservation area (P-3). Access driveways to wind turbine developments are not allowed to cross P-3 zoned

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Municipality "Report to Regional Council" (11 April 2011), online: Halifax Regional Municipaity <www.halifax.ca/council/agendasc/documents/110524ca1016i.pdf>.

99 MPS 2014, *supra* note 8 at 40.

100 *Ibid* at 128.

101 *Ibid*.

102 *Ibid* at 128.

103 MPS 2014, *supra* note 8 at 40.

104 Halifax Regional Municipality, revised by-law, *Land Use By-law for Planning District 4* (18 October 2014), s 4.33 [HRM].

105 *Ibid*, s 4.33.

106 Halifax Regional Municipality, Western Region Community Council, "Community Council Report: Rezoning Driveway Access for Wind Turbines in Terence Bay" (25 June 2012), online: Halifax Regional Municipality <www.halifax.ca/Commcoun/wrcc/documents/WR12.1.3.PDF> [Decision Rezoning Driveway].

lands,[107] and therefore the parcel of land had to be rezoned in order to allow the use of the access road for construction of the turbines. This was done during a council meeting in 2012.[108]

While there are provincial standards and policies that apply across Nova Scotia, decisions about local developments are in the hands of municipalities.[109] Public consultation and support are becoming increasingly important elements in wind energy development in Nova Scotia, and have shaped different municipalities' approaches to such projects. Some communities, such as Berwick and Mahone Bay, have put in place mechanisms for extensive public consultation through the Alternative Resource Energy Authority. The HRM's approach to the issue of public consultation has been different, however. When Crown land was rezoned in Terence Bay, the public was notified and given the opportunity to comment, but only with regards to the access road and not on the issue of wind energy or the construction of the turbines.[110] This seems to be part of a broader trend. The 2006 MPS accepted that there is a certain amount of controversy surrounding the development of wind energy and that "a large portion of the public are predisposed to considering wind energy facilities in a negative light given the obtrusive nature of the technology."[111] It also suggested a view that certain regulatory tools that would allow for greater public participation are inappropriate for dealing with conflicting public opinions, especially with regards to issues of visual and sound impact mitigation.[112] As such, these regulatory instruments are not to be used, and applications for wind developments are processed on an as-of-right basis. The 2013 draft does not make mention of negative public opinion relating to wind developments and references to as-of-right approval have been removed.

The result has been that wind developments are approved in HRM, but in the face of considerable opposition and without any meaningful dialogue about the conditions under which wind developments might be accepted and perhaps even embraced. It is clear from other jurisdictions, such as Germany, that a significant level of wind development can take place with local support, and that issues such as local engagement and ownership can play a significant role in the level of support or opposition.[113]

5. LESSONS FOR SEA DESIGN AND IMPLEMENTATION

More wind development in Nova Scotia is clearly desirable, both in light of its contribution to reducing GHG emissions and air pollution, and its potential to contribute to energy security, price stability, and economic development in Nova Scotia. At the same time, it is equally clear that this does not mean that every individual wind project is designed and located

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107 HRM, *supra* note 104, s 31.1.

108 Decision Rezoning Driveway, *supra* note 106.

109 NS Energy, "Community Support and Consultation", *supra* note 44 at 2.

110 Halifax Regional Municipality, Western Regional Community Council, "Western Region Community Council Minutes, 25 June 2012" at 12.1.3, online: Halifax Regional Municipality (Council Minutes) https://www.halifax.ca/Commcoun/wrcc/documents/120625WRCCminutesJune252012.pdf

111 HRM, *supra* note 104, s 128.

112 *Ibid*.

113 Paul Gipe, *Wind Energy Basics: A Guide to Home- and Community-Scale Wind Energy Systems*, 2nd ed (White River Junction, VT: Chelsea Green Pub Co, 2009).

so as to maximize benefits, minimize risks, and ensure net long-term benefits. It is difficult to determine, based on the provincial EA process, how decisions made to date have ensured minimum impacts, risks, and uncertainties, as well as maximum benefits, while securing net long-term benefits to the province of Nova Scotia. The provincial EA process appears primarily designed to ensure that individual environmental impacts do not cross a particular acceptability threshold. Emerging concerns such as health impacts and knowledge gaps challenge the project decision making process.

Nova Scotia currently finds itself in a position where public support for proposed wind developments is surprisingly low given the general support for wind energy. In Kings County, public opposition resulted in a shift from full municipal support to a moratorium on wind developments. In HRM, developments are supported, but often over local opposition. More importantly, neither municipality has been able to achieve a position on wind developments that fully recognizes the potential and the impacts, risks and uncertainties, while ensuring public support for the industry. The approach taken in Kings County clearly errs on the side of undervaluing the important contributions the industry can make to a sustainable and prosperous Nova Scotia. HRM's main challenge appears to be the full recognition and consideration of risks and uncertainties, and the potential loss of social licence associated with its pro-development position. In other words, the risk in HRM is that projects will get approved that should not have been approved, or that could have been designed or located in a manner that would result in lower impacts, risks and uncertainties, or greater benefits.

In the following section, we consider the contribution a well-designed provincial SEA process could make to improving the governance of wind developments in Nova Scotia. We draw on nine principles of good SEAs developed through previous research to explore the contribution a provincial scale SEA on wind developments could make to better decision making and governance of this industry sector.[114]

The SEA should be applied early and proactively

The value of early and proactive use of SEAs in the case of a new industry sector is amply illustrated through the experience with wind developments in Nova Scotia. In the face of clear environmental and energy security benefits and economic opportunities, there has been considerable local opposition to wind developments in Nova Scotia, as illustrated by the municipal case studies. Furthermore, there has been considerable duplication at the project EA level that could have been avoided through an early and proactive SEA process. Early SEAs are an opportunity to build social licence for a new industry, as demonstrated in Nova Scotia through the 2008 Tidal SEA.

Ideally, the SEA would have been triggered by the first proposals for commercial scale wind turbines more than a decade ago, or at a time when wind was first considered as a viable alternative to coal as a source of electricity in Nova Scotia, and updated as warranted by changing circumstances. Such a SEA could have given clearer guidance to wind developers

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[114] Meinhard Doelle, Nigel Banks & Louie Porta, "Using Strategic Environmental Assessments to Guide Oil and Gas Exploration Decisions: Applying Lessons Learned from Atlantic Canada to the Beaufort Sea" (2013) 22:1 RECIEL 103; Meinhard Doelle, "Role of Strategic Environmental Assessments in Energy Governance: A Case Study of Tidal Energy in Nova Scotia's Bay of Fundy" (2009) 27:2 J Energy & Natural Resources L 112; Gibson et al, *supra* note 2.

and project level decision makers on how to make siting and design decisions that minimize impacts, risks and uncertainties while maximizing benefits. It would have provided better guidance on the policy context within which municipalities were invited to integrate wind into their regional planning. It could have communicated more clearly to the public that their concerns were understood and taken into account in site selection and project approvals.

The SEA should be integrated at a substantive level, by incorporating biophysical (or "ecological"), social, and economic aspects

One of the critical contributions a SEA could make to wind energy governance is to facilitate the difficult process of translating provincial renewable energy targets into project level decisions. The SEA would enable better project decisions on whether a particular proposed wind development makes a valuable contribution to meeting provincial renewable energy goals, or whether there may be more suitable options for meeting these goals, either in terms of location or technology. This means the SEA would more clearly identify the role of wind in the energy mix from an environmental, social, and economic perspective. The SEA would include technical considerations such as the energy mix and the electricity grid. It would include human perspectives, such as health concerns, impact on the enjoyment and use of private property, social licence, compatibility with other human activities, and local benefits. It would consider values and priorities at a provincial level, and offer mutual learning opportunities for stakeholders to better understand each other's concerns, identify opportunities to overcome differences, and build more consensus on the appropriate role for wind in Nova Scotia's energy mix in the medium and long term.

The SEA process should pay particular attention to issues that have been difficult to deal with at the project level, such as broader policy considerations, cumulative effects, and alternative means of achieving provincial renewable energy targets and other energy policy objectives. The SEA would identify important knowledge gaps and areas of uncertainties, identify ways to address these proactively, and set clear directions on how these uncertainties and knowledge gaps are to be addressed at the project approval stage until they are resolved.

A SEA could develop a decision making framework for determining whether an individual project is likely to offer net long term benefits to the province beyond its contribution to meeting provincial renewable energy targets through an integrated approach that includes a full range of environmental, social, and economic factors.[115]

The SEA should take into account its place within the other "tiers"

It is clear from our two case studies that municipalities and local residents want to have a say over where, and under what conditions wind developments take place in their communities. At the same time, the Kings County case study demonstrates the danger of leaving too much power in the hands of municipalities and local residents, as decisions at the local level may undermine legitimate provincial policy goals. A SEA would be a good place to work out what

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[115] B Gibson et al, *Sustainability Assessment: Criteria and Processes* (Sterling, VA: Earthscan, 2005); Meinhard Doelle, "The Role of EA in Achieving a Sustainable Energy Future in Canada: A Case Study of the lower Churchill Panel Review" (2013) 25 J Envtl L & Prac 113 [Doelle, "Churchill Case Study"].

issues are determined through provincial policy, what issues can be decided at a municipal level through regional planning processes, and what issues remain to be resolved at the project EA level, with opportunities for local residents to participate in that process.

Assessments of lower tier initiatives may influence improvements in a higher tier. For example, the rich experience with project EAs in Nova Scotia provides useful information for a SEA. This is not a reason not to do a SEA early, but it does suggest that a SEA needs to be an ongoing process that benefits over time from experience at the project EA level. A SEA in turn could better inform regional planning in HRM and perhaps provide an opportunity for the provincial government to reflect on current policies.

Improved assessments at all levels, as well as the practical benefit that the overall assessment process is "streamlined", are among the benefits of tiering. Efforts to deal with wind developments at the municipal level, both in Kings County and in HRM, would benefit from the existence of a SEA. In short, rather than a provincial policy context that simply demanded more wind energy to meet provincial renewable energy targets, a SEA would give guidance on how to ensure the renewable energy target is met in a manner that minimizes impacts, risks, and uncertainties while maximizing benefits. This would include appropriate siting decisions, mitigation measures, but also consideration of the contribution of wind versus other forms of renewables, as well as the contribution of conservation and efficiency to the goals of the renewable energy strategy.

To achieve proper tiering of decision making, the process or terms of reference for the SEA should establish a clear link between the SEA outcomes and future higher and lower tier decisions.

The SEA process should be guided by a legislative, regulatory, or policy context

The importance of integrating the SEA process and its role in decision making on emerging industry sectors such as wind developments enshrined in legislation is most clearly demonstrated through the municipal case studies. Without the legislative context, it is difficult to see how the results of the SEA would find their way into regional planning at the municipal level. It is clear from the Kings County case study, in particular, that provincial energy policy was not clearly and fully considered in developing the municipal position on wind developments. A SEA could make it clear that all regions of the province have to play their role in facilitating the transition away from coal, while giving enough flexibility to municipalities to address legitimate concerns of their residents.[116]

The credibility of the SEA process for social licence of the industry also points to the need for key elements to be set out in legislation. They include a clear delineation of assessment roles and responsibilities, with mechanisms to ensure credible independence of assessment review, transparency, public engagement, impartial administration, and adequate time and resources.

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[116] For example, an outcome of a wind SEA might have been that each municipality must accommodate wind in proportion to electricity use within the municipality, but that it has some control over separation distances and suitable locations.

The SEA process should be flexible to fit the circumstances and be carried out in an effective, efficient, and fair manner

There is clearly value in having the ability to consider the elements of a SEA process designed specifically to deal with the unique challenges of the wind industry in Nova Scotia. Such flexibility allows the process design to consider the overall context, including the subject matter of the SEA, the scope, the decisions to be informed, the existing decision making context, and who is in charge of the process. The process needs to have an appropriate combination of flexibility and the legislative and regulatory guidance necessary to identify the appropriate scope of the SEA in light of the decisions it is intended to inform. To ensure this flexibility does not undermine the credibility of the SEA process, the party in charge of the process must be carefully selected to be demonstrably impartial in light of the purpose and scope of the SEA, as well as the decisions to be informed.

The SEA process should be transparent and include opportunities for active public involvement throughout

The wind indistry's social licence challenge in Nova Scotia is a reminder of the value of full transparency and proactive engagement of the interested and affected public before communities and individuals are confronted by a specific wind development. At the same time, experience with the Tidal SEA has shown that it takes more effort to engage citizens at the strategic level, before specific project proposals are filed and cause communities to take notice. SEAs therefore require enhanced efforts to encourage public participation. SEAs are only as useful as they are successful in engaging those with a stake in the outcome. The success of public engagement therefore ultimately has to be measured in terms of the result, not just the effort to engage. The Tidal SEA experience demonstrates that through proactive public engagement and transparency, public support for a new industry can be enhanced.[117]

The SEA needs effective incentives to ensure participants are motivated to learn from the results, and decision makers use the results to inform future decisions

One of the lessons from project EA is that it is possible to mandate government decision makers to follow an EA process, but it is difficult to force an unmotivated and unwilling decision maker to implement the process and use the results to improve decision making. The experience with self-assessment under the *Canadian Environmental Assessment Act* (CEAA) is a case in point. Some government decision makers, such as the Department of Fisheries and Oceans, have in the past been taken to task for attempting to prevent the triggering of EAs under CEAA.[118] This means that a SEA should be designed to motivate decision makers to learn from the process and to use the results to make better decisions.

In the case of a SEA of wind production, this would include clear expectations on how the results of the SEA feed into regional planning decisions at the municipal level, perhaps dealing with competing use and human health concerns. The SEA would similarly set out

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117 Doelle, *EA Guide*, *supra* note 1.

118 Arlene Kwasniak, "Slow on the Trigger: The Department of Fisheries and Oceans, the *Fisheries Act* and the *Canadian Environmental Assessment Act*" (2004) 27 Dal LJ 347 at 349.

how its conclusions feed into project EA decisions, perhaps dealing with efforts to minimize environmental impacts, risk and uncertainties, maximizing benefits, and ensuring that projects are only approved if they offer clear net benefits to Nova Scotia in the long term, as compared to clear alternatives.[119]

The assessment must be followed up in terms of actual performance, as well as actual effects

All SEAs should require that actual performance be compared with predictions, and that appropriate steps be taken in response to the results of the follow up in terms of improving:

- future decision making under the particular SEA,
- the development of future SEAs and resulting policy decisions,
- the SEA process itself.

Key elements in achieving this goal will be effective monitoring and reporting at the project level, in combination with updates to the specific SEA as changing circumstances warrant.

There must be political commitment to put in place and implement a SEA regime and to use its results

Much of the momentum for implementing an effective SEA process will only be realized when decision makers are shown the benefits of such a regime. Key decision makers should be participants in the design, establishment, and implementation of the regime. By participating in the process, decision makers are more likely to see the benefits of following the recommendations, to understand the subtleties of the conclusions reached, and to appreciate the risk of deviating from the results in terms of community and stakeholder support for future government decisions.[120] In the case of wind energy, this means project level decision makers, wind developers, municipal decision makers, and public interest groups should be actively involved in the design and implementation of the SEA process.

6. CONCLUSION

In this article, we have considered the decision making experience of wind developments in Nova Scotia, with an emphasis on project level EAs and regional planning in two municipalities. We then considered the opportunity for a carefully designed SEA process to enhance the governance of wind developments in the province, to illustrate the benefits to the wind sector as well as the more general contribution SEAs can make to the governance of new emerging industry sectors.

Our conclusion is that a SEA of wind production can make a valuable contribution to the governance of this industry sector in Nova Scotia. A SEA process has the opportunity to

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[119] There are decision-making frameworks available that could be adjusted to assist with the difficult process of determining "net benefits". See e.g. Doelle, "Churchill Case Study", *supra* note 115.

[120] Hugh Benevides et al, "Law and Policy Options for Strategic Environmental Assessment in Canada" (2009) Minister of the Environment's Regulatory Advisory Committee Working Paper, online: SSRN (working paper series) <papers.ssrn.com/sol3/papers.cfm?abstract_id=1660403>.

improve the social licence of wind energy, can make the project EA process more efficient, effective, and fair, and can ensure a more appropriate and effective role for municipalities in the decision making process. Finally, a SEA of wind production would also provide an opportunity to improve the coherence of and support for provincial policy on renewable energy and to ensure provincial policy evolves with changing circumstances.

It is difficult to draw broader conclusions about the value of SEAs for other sectors in other jurisdictions. However, our assessment of the wind sector in Nova Scotia does support the general view in the literature that SEAs have much to offer to improve the decision making for emerging new industry sectors.