SEC 2015-06

January 17, 2014

Northern Pass Transmission, LLC
Attn: Anne Bartosewicz, Proj.Director
780 N. Commercial St.
Manchester, NH 03101

RE: Northern Pass (Transmission) Project;
Alternative Underground Route Analysis

Dear Ms. Bartosewicz:

This letter is being submitted relative to your proposed Northern Pass Transmission Project for the importation of renewable hydroelectric power from Quebec, with transmission through NH, followed by connection to the grid in New England. The project has been highly controversial once the proposed routing method became clear, with 100% of the routing lying within NH, starting at a point at the Pittsburg line and terminating in Deerfield.

In my own view, as a resident who frequents the Great North Woods and as a Registered P.E. for my own environmental consulting firm, I do support the importation of clean renewable hydropower. Not only will it help to reduce CO_2 emissions throughout the region but it will also serve as a critical component in further enhancing the diversity of energy sources that we now have. The days of marital bliss with an abundance of cheap natural gas are numbered, as you well know. Just watch the rate of our gas bills this winter as peak demand will dramatically increase our rates. And with N.England being at the end of the gas supply lines, it's just a matter of time before new supply lines are proposed – and to be paid by whom? You & I. Enough said.

But what I do strongly object to is not only the route you have chosen, through pristine scenic areas with overhead (OH) lines, but more pointedly, the approach and methodology that you have taken since the inception of the project. Yes, I acknowledge that you did hire outside consultants who worked with your staff in terms of identifying constraints and accessibility issues, which then led to evaluating alternative routes and ultimately, a recommended route. That's all fine – and frankly – fully expected. But the problem lies thereafter, where rather then fully vetting both the various routes studied and the recommended final route chosen through numerous public meetings, you opted to proceed *first* with the purchase of easements and/or outright acquisition of property. A classical case of putting the cart before the horse - a decision which speaks volumes about today's corporate mentality who are accustomed to getting their own way. That decision of not seeking prior input from State residents & various parties/organizations impacted, at large, is one that I believe you regret. Now, only since there has been a serious and very outspoken public backlash relative to the routing proposed have you adopted a more conciliatory tone. So, it should come as no surprise to you that many of us are still asking ourselves – "What in God's name were they thinking"?

The purpose of these comments for submittal are two-fold; 1) to serve as scoping comments for the Environmental Impact Statement being prepared by S.E. Group under the direction of Brian Mills at the Department of Energy and 2) to highlight areas of concern and to serve as possible options for the State of NH Site Evaluation Committee being chaired by Thomas Burack of the NH Department of Environmental Services (DES).

In proceeding forward, I would strongly recommend that you accept and adopt the following positions:

1) Commitment - Make a commitment to:

A) Come clean in addressing all questions, regardless of their perceived relevance in your eyes;

B) Strive to present a complete picture (for both sides) rather then the disjointed approach and biased one-sided views you have given to date. Sincerely addressing opposing views gives legitimacy to both sides, particularly your own;

C) In presenting cost estimates for alternative routes, you'll establish credibility for the data and routes being evaluated *if* you present cost estimates in the form of a range, so as to reflect both a minimum as well as an expected high end. And that should apply to both your own preferred routes as well as alternative routes (where there is a consensus), for OH transmission lines; and
D) Be open to compromise and alternative proposals that will be suggested, including a hybrid approach, as I have presented herein.

2) Questions - Truly address/answer questions that I (& others) have asked or pondered at prior public meetings but have yet to hear a response. A sampling would include:
A) In viewing the project as a *whole* (not just transmission line conveyance), is the hydroelectric plant that will generate the power, already in existence? If yes, will it need to be enlarged/expanded upon - or if not, will it have to be built from scratch?
B) In citing lower GHG emissions, your presentation boards did not explain if you accounted for the permanent loss of trees/vegetation in your calculations, unless the impoundment already exists and will not be expanded upon.
C) Moving towards a possible *compromise* on tower height, why can't the height of the proposed towers be capped in those areas where they will parallel an existing OH line. No doubt it would require additional towers, which will undoubtedly raise the cost, but are their any technical or safety reasons as to why the new towers can not be equivalent to the height of the existing towers at any one location + say 20'? Should they be capped in such a manner, they might be only slightly higher then the tree line, but would the increased costs kill the project, or is it simply a longer payback period? Adopting this type of approach may certainly quell some public opposition where you propose to parallel the existing line. This needs to be addressed at length rather then dismissed.

3) Underground Transmission Lines - Much has been stated relative to underground (UG) transmission, which you acknowledge, all be it reluctantly, that yes – technically it is possible. However, not only have you chosen not to consider it, but you do not (willingly) disclose where it has been done in other sections of this country, including New England. In fact, a Google search for high voltage direct current (HVDC) lines brings up a ton of data, including HVDC light (by ABB). This HVDC cable can have either an aluminum or copper core, it has a neutral electromagnetic field and it is already becoming more widely used in both Europe as well as the far East, particularly China. So, not only is it feasible, but when I see all of the application & usage data, overseas, it raises the question within me of "What are we missing; what are we overlooking"? Is it technical or is it based on profit motivations?

Your dismissal of UG transmission is based on your citing it as being cost prohibitive. I don't believe that anyone would question that it is more costly, but you fail to qualify that, by not addressing how much more? Is it 100%, 300% or 650% more? And before you can even estimate how much more, you need to first select a route for UG transmission so that an estimate can be developed. No doubt, you would likely choose the existing OH route that you have proposed, which is through mountainous terrain in the Great North Woods (excluding the short 8 mile UG stretch in Stewartstown) for the first cut at arriving at a cost estimate. That's fine, but due to the terrain, as your representatives have often mentioned, I myself expect the cost for that route to be astronomical. So, rather then wasting your resources on a process and route where we already know the answer, I, as many others have already suggested, maintain that you need to *seriously* consider (and accept for consideration) a public transportation corridor for an UG transmission route. In looking at several maps prepared by the Society for the Protection of NH Forests (Forest Society), one that immediately comes to mind and has been previously suggested is the I-93 corridor.

In considering the I-93 corridor, much of the rugged terrain, steep topography, bedrock outcrops and wetland crossings, that you correctly point out as being significant cost factors, has already been dramatically moderated simply by the construction of the highway. No doubt, there will still be challenges but the sheer number of them will be substantially reduced. Again, I acknowledge the cost will be higher, which will extend your payback period through your transmission lease payments, but how does one compare two different routing options if the applicant dismisses one from the onset? I would suggest the following as one possible option for the I-93 corridor:

A) As a starting point for an UG line, start at the intersection of I-93 and the proposed line at the Bethlem/Sugar Hill Town border. Proceed southerly, thru the Notch, and follow I-93 all the way down to the intersection of either Route 393 (Concord) or Route 3 (Manchester St.) and proceed from either of those locations to the terminus in Deerfield. Should there be sections that are not passable, then note that and suggest deviations or alternate legs for those sections, where applicable, from the highway Right of Way (ROW). Develop a cost estimate for this portion, in the form of a range, accompanied by updated mapping.

B) Following the development of this cost estimate, consider the applicability of this same concept but to the North. At the same intersection of I-93 and the proposed line at the Bethlem/Sugar Hill Town border, proceed northerly on the currently proposed route to the intersection of Route 3 in Whitefield. At that intersection, use Route 3 and the Connecticut River valley as the transportation corridor to the intersection of the current proposed line in Clarksville. Where passage is not possible, note that and suggest deviations or alternative legs to bypass the obstacle. Similarly, develop a cost estimate for this portion, in the form of a range, accompanied by updated mapping.

C) Be prepared to present your cost estimates, findings & recommendations to the public, thru both written hand-out materials, as well as public meetings. The development and consideration of this alternative, or any UG proposal, needs to be completed and thoroughly vetted before completion of the on-going EIS. This has also just recently been proposed by NH's Congressional delegation. And I would even take it one step further to state that the EIS should be tabled or deferred for a period of time until such an alternative routing study has been completed.

4) Partnership/Hybrid Approach – Hydro-Quebec & Northern Pass have developed a method referred to as - transmission lease payments - to pay for the installation and cost of maintaining the proposed OH line. But when you (or others, perhaps within the EIS being managed by DOE) opt to *seriously* consider an UG line, consider the concept of a possible hybrid approach, as described below.

Other States have shared, where a public transportation corridor exists, in the revenue from the lease payments for the use of that public corridor, whether it is a highway or a railroad ROW. So I am proposing you consider developing a private/public partnership with the State of NH and structuring a lease payment plan, similar to the following:

- Enter into an agreement with the State of NH on a 75%(N.Pass)/25%(State) percentage basis for the amount of the lease payments.
- Payments to the State would be deferred for a period of five full years, to compensate in part for the higher additional cost of the UG line, with the State not beginning to benefit (economically) until the beginning of year six.
- This arrangement would continue for the life of the transmission line, which I'm sure is in excess of a century.

5) Closing – Before you hastily arrive at a conclusion that the cost of any UG line, beyond the 8 mile stretch proposed thus far, is cost prohibitive and that it will jeopardize the entire project, you also need to consider the following as a means of developing a better balance for the entire project:

- Applying a surcharge to all recipients who receive this power thru the grid, excluding NH residents, as out of State folks are materially benefiting from this renewable power in meeting a portion of their State's Renewable Portfolio Standard (RPS). Conversely, NH residents benefits are minimal for RPS and we inherit a permanently scarred landscape that will amount to a visual albatross if built as an OH line.
- N.Pass has stated that it intends to enter into a Purchase Power Agreement (PPA) with NH, which offers NH customers a preferred rate and that this "remains a high priority"; but to date, it is nothing more then a promise. This needs to be formalized with some numbers attached so that NH has a sense of what this *really* means.
- You need to be serious about considering an UG line. To date, it's largely been "my way or the highway"; and that has not gone well, has it? And what's really surprising is that you have been blind to the irrefutable political euphoria that you would generate by offering to install an UG line. Furthermore, it would begin to signal that Yes – perhaps you have begun to accept a changed mind set, one where you seek to achieve some sort of balance; a balance that recognizes that there is a compelling need to be beholden to the residents of the State of NH rather then your chief executives, board of directors and stockholders.
- And last but not least, just imagine if you had been more diligent and forthcoming earlier on in this process, had more fully engaged the public before you started going out and purchasing easements, ROW's or acquiring property, just imagine how much good will and how much money and resources you could have applied towards an UG line solution with the money doled out, at no doubt, highly inflated astronomical prices. Just imagine –

Ronald Rayner, P.E.
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Copies: both electronic & hard copy, to:

1) Brian Mills, Department of Energy;
2) Thomas Burack, Chair of NH's Site Evaluation Committee
3) NH's Congressional Delegation