

A scenic view of a coastline under a clear blue sky. The foreground is filled with lush green vegetation, including tall grasses and shrubs. In the middle ground, a calm blue sea stretches towards a distant, low-lying island or headland. To the right, a steep, rocky cliffside descends to the water's edge. The overall atmosphere is serene and natural.

# Fundy Tidal Energy Strategic Environmental Assessment

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Credit: C. Wilcox

# What is an SEA?

A form of environmental assessment to

- ✓ evaluate implications of policies, plans or programs
- ✓ provide advice to decision makers on broad goals, objectives and directions
- ✓ provide a framework in which specific projects can be planned, assessed, developed and managed.

# Types of SEA's

- Regional assessments
- Sectoral assessments
- Assessments of specific existing or proposed government policies, plans and programs
- SEA to fill policy gap identified in project EA or to develop new policy
- SEA as a follow-up to past project decisions (i.e. after the “first” project EA)

# An SEA is **Not**

- A Project Assessment
- A Class Assessment
- A Generic Assessment
- A Project EA Follow-up Program
- An Integrated Planning Process

# Elements of an SEA

- Informs decisions beyond a specific project
- Can be reactive or proactive
  - react to the proposal of a particular project, i.e. the broader issues raised by a project
  - react to a proposed policy plan or programme
  - proactively addressing a SD challenge
  - proactively seeking to fill a policy gap
- Can provide framework for future policy, plan, program and project decisions

# Steps in an SEA Process ..

- Process Selection (Design)
- Scoping (Broad)
- Information Gathering
- Review
- Public Engagement (More Effort)
- Documentation of Results
- Decision Making
- Follow-up

# A Good SEA Should Be

- Customized to fit the particular application to a given policy, plan or programme to be assessed.
- Clear about its objective and meet that objective with integrity
- Focussed on providing information relevant for decision makers
- Driven by SD principles

# A Good SEA Should Be

- Integrated with (parallel?) analysis of social and economic considerations
- Integrated with other planning and assessment processes
- Transparent and open
- Practical
- A mutual learning process

# SEA's Value

**“A good-quality Strategic Environmental Assessment (SEA) process informs planners, decision makers and affected public on the sustainability of strategic decisions, facilitates the search for the best alternative and ensures a democratic decision making process. This enhances the credibility of decisions and leads to more cost- and time-effective EA at the project level.”**

IAIA Strategic Environmental Assessment Performance Criteria, 2002

# What's The Difference?

## Project-specific EA

- More reactive
- Focuses on single project
- Detailed assessment at a specific project site
- Cumulative effects assessment problematic
- Happens once per project
- Should be informed by SEA

## Strategic EA

- More pro-active
- Precedes specific projects
- Higher level assessment
- Better suited to address cumulative effects
- Potential to be iterative, mutual learning
- Informs project EA

# The SEA Cabinet Directive

Should Answer 5 Q's:

- Potential direct and indirect outcomes of the proposal?
- Interaction with the environment?
- Scope and nature of interactions?
- Can adverse effects be mitigated? Can positive effects be enhanced?
- Net potential environmental effect? [

# The SEA Cabinet Directive

Has not been effective, because:

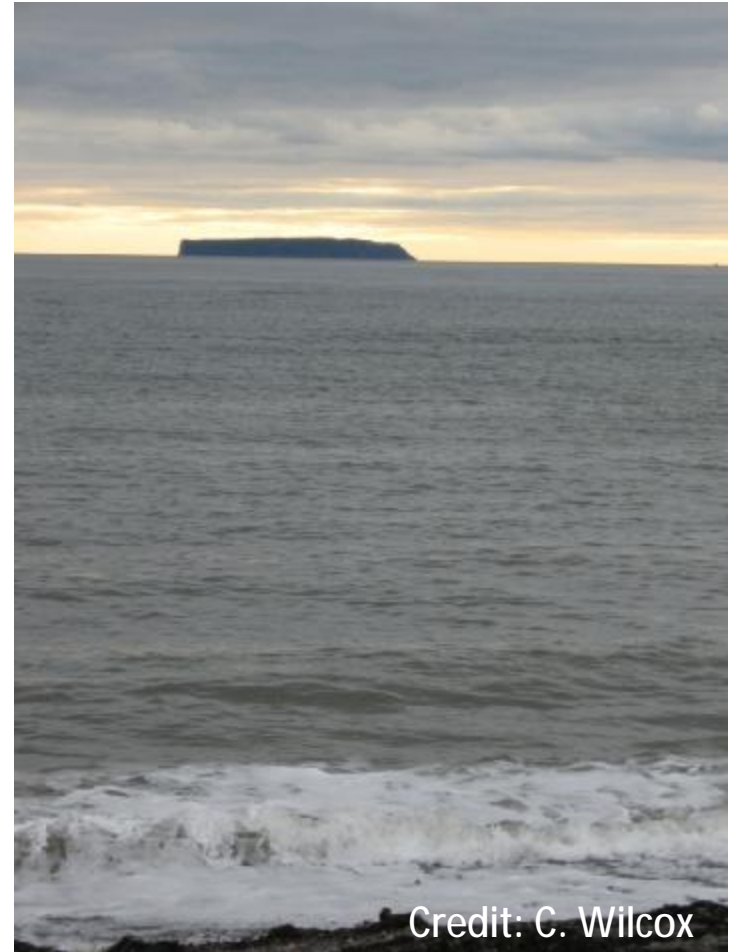
- It applies to major cabinet decisions only
- It is not transparent
- No public involvement is required
- It is rarely used to actually inform decisions

Bottom line: Audit by Commissioner for SD  
Points to need for legislative base,  
transparency and public engagement

# The Fundy Tidal Energy SEA (A Pilot?)

Asked to address:

- ✓ Whether tidal energy should be developed
- ✓ Alternative ways it could be developed
- ✓ Potential interactions with the biophysical and socio-economic environment
- ✓ Information gaps that need to be filled.



Credit: C. Wilcox

# The Basics

- ✓ Commissioned by NS Dept. of Energy (\$250,000)
- ✓ Carried out by Offshore Energy Environmental Research (OEER) Association – a research partnership of NS government & three NS universities
- ✓ Time frame April 07 to May 08
- ✓ “inform decisions on whether, where, when and under what conditions to allow pilots and commercial projects into the water .....and under what conditions renewable energy developments in the Bay of Fundy are in the public interest over the long term”
- ✓ In collaboration with New Brunswick (\$60,000)

# Overview of all marine renewables....

## Offshore Wind

### Wave energy

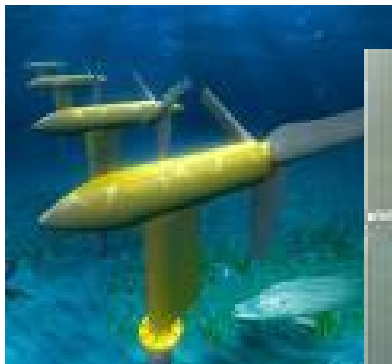
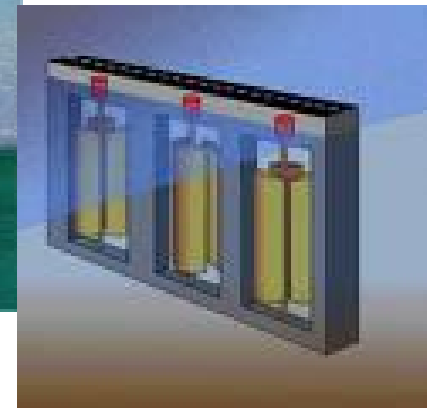
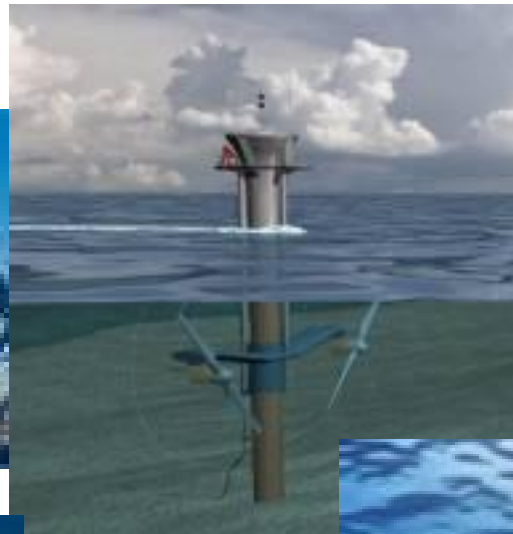


### Other tidal (lagoon)



Fundy Tidal Energy SEA

# ... but focus on in-stream tidal turbines



Fundy Tidal Energy SE



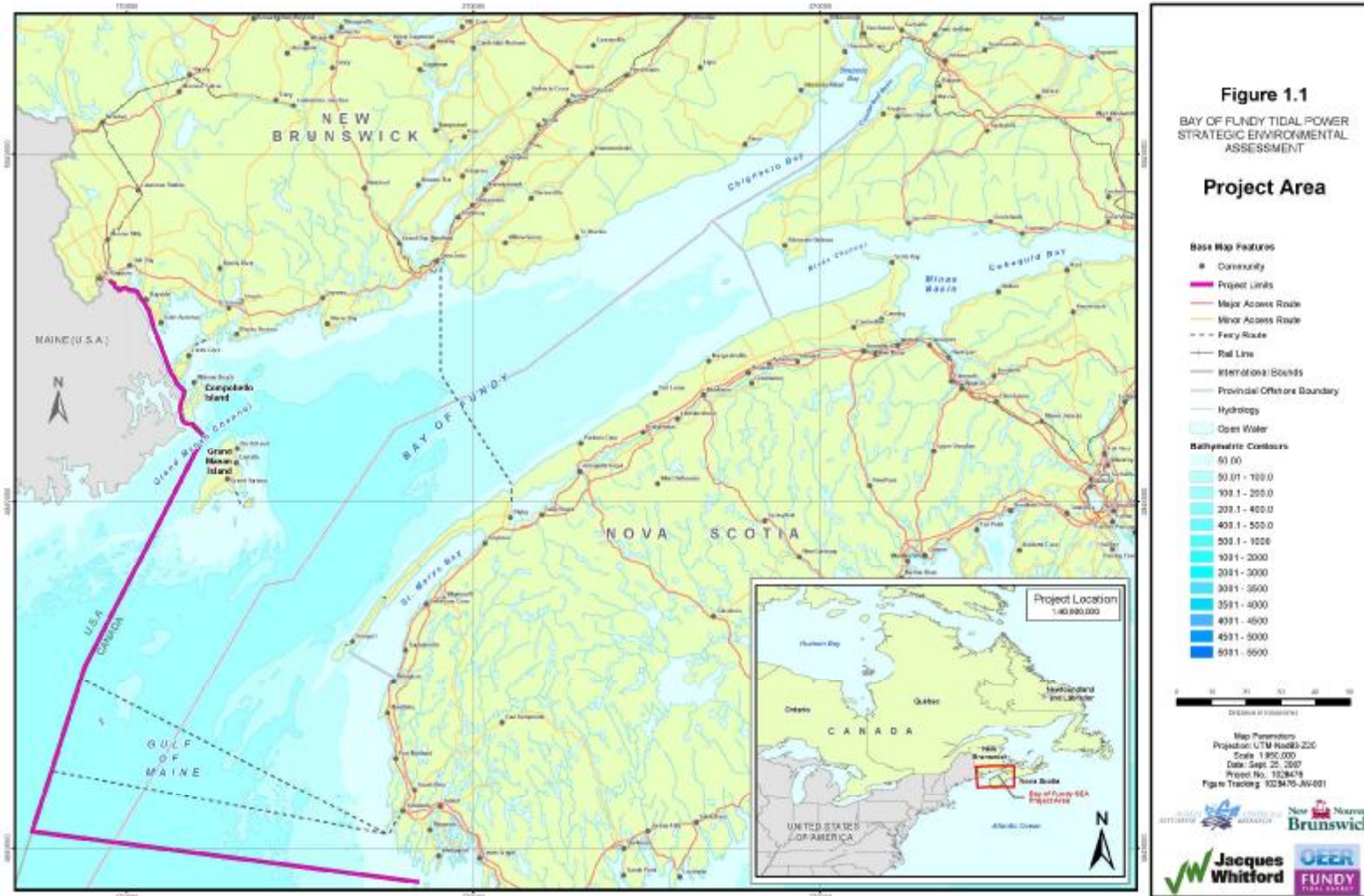
# Key Questions

1. Can marine renewable energy technologies be developed without significant impacts on the marine ecosystem?
2. Can these technologies can be developed without significant socio-economic impacts on fishers and the fisheries and on other marine and coastal resource users?
3. What contribution can marine renewable energy technologies make to community and regional economic development in Nova Scotia?

## Key Questions ... cont.

4. Under what conditions should pilot projects be permitted?
5. What Q's need to be answered from pilots?
6. What ongoing research and monitoring is required in order to make decisions about commercial developments?
7. What criteria should be used to determine whether, where and how commercial projects should be developed, regulated and managed?
8. How can net long term benefit to NS be maximized?

# SEA Study Area



# Bay of Fundy

- ✓ 290 km long/100 km at the mouth
- ✓ "One huge estuary"
- ✓ 16 metre tidal range in Cobequid Bay
- ✓ High tides caused by shape of the Bay, and Seiche ("bathtub") effect
- ✓ 100 billion tonnes of water in and out every day



# Bay of Fundy



- ✓ Current velocity affected by cross-section
- ✓ In Cobequid Bay reaches  $>6\text{m}/\text{sec}^{-1}$
- ✓ The stronger the currents, the higher the sediment carrying capacity

# Bay of Fundy

- ✓ Ice, on the surface and below
- ✓ “Dirty” cake ice



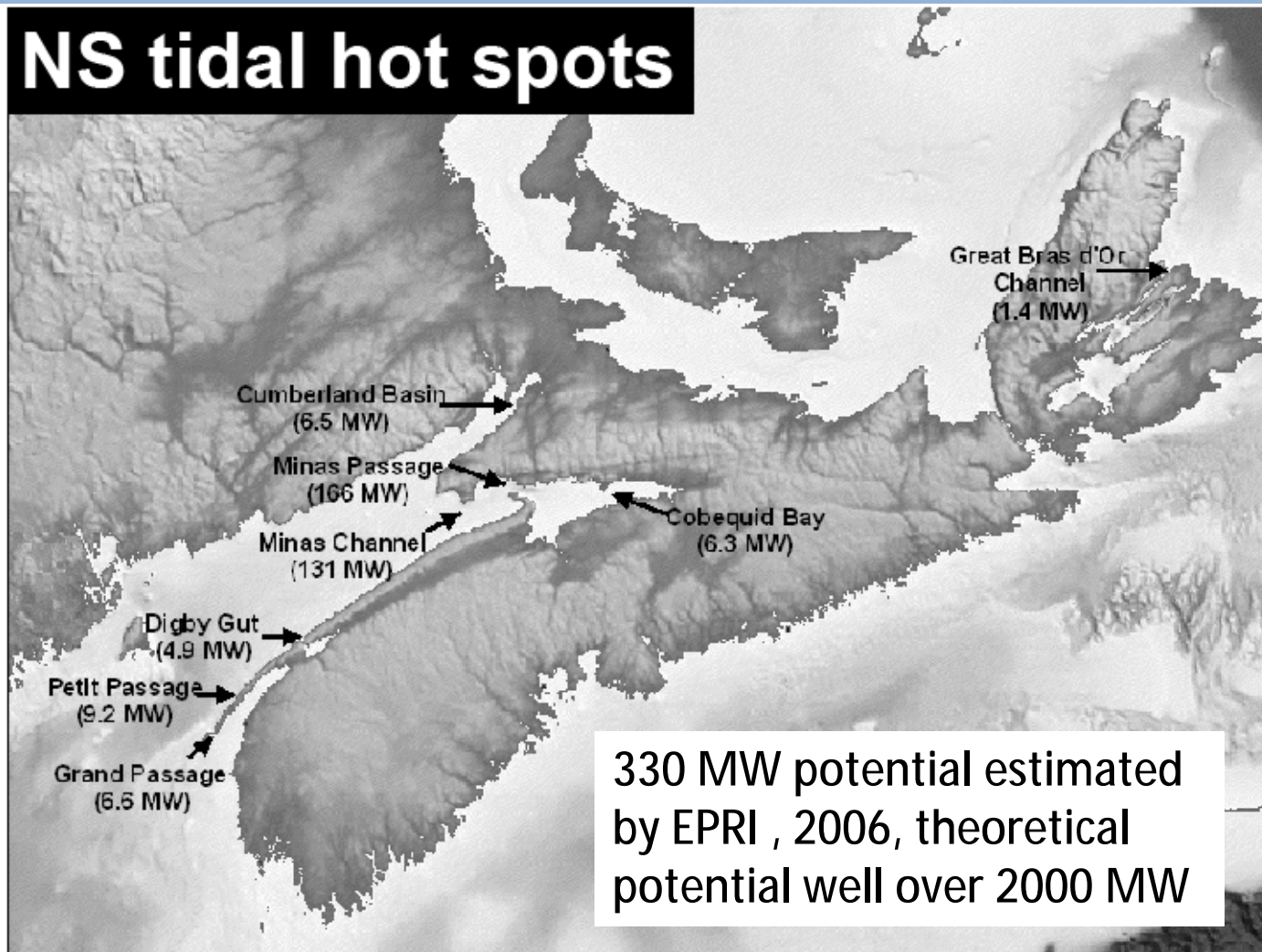
# Bay of Fundy

- Outer Bay: herring, cod, haddock, lobster, scallops
- Inner bay: herring, flounder, shad dogfish, lobster and clams
- Also sea urchin, marine worms and seaweed
- Landed value > \$105 million per year



# The Resource -- one version ..

## NS tidal hot spots



# Ad Hoc SEA Process .... Part I

- ✓ Appointed Tidal Advisory Group (April)
- ✓ Monthly newsletters (June -)
- ✓ NS and NB commissioned Background Report, prepared by environmental consultants (Sept)
- ✓ Six community forums (Aug)
- ✓ Appointed 25-person Round Table (Sept)
- ✓ Participation Support funding awards (Oct)
- ✓ No formal scope decision, only areas of focus

# Stakeholder Round Table

- ✓ OEEER subcommittee sat on Round Table
- ✓ 25 additional stakeholders appointed
- ✓ 3 reps of fishing industry
- ✓ 3 reps of ENGOs
- ✓ 3 municipal reps
- ✓ 3 tidal developers
- ✓ Nova Scotia Power
- ✓ Tourism, shipping, aboriginal ...

# Participation Support Funds.....

## ✓Funding Criteria:

- Encourage wider participation
- Support relevant locally-based research

## ✓Funded Topics Include:

- First Nations fishing activity
- Sustainable energy and rural development
- Integrated Coastal Zone Management
- Public engagement
- Fishers' traditional knowledge
- Submerged ice

# Ad Hoc SEA Process .... Part II

- ✓ Release of Background Report and other information gathered (Jan)
- ✓ Written comments on the Background Report and related issues (Jan/Feb)
- ✓ Second round of Participant Funding
- ✓ Ongoing Roundtable dialogue (monthly)
- ✓ Draft SEA report released (April)
- ✓ Three public workshops on draft (May)
- ✓ SEA report finalized! (May)

# Key Issues Identified

- ✓ What role should marine renewables play in Nova Scotia's energy future?
- ✓ How much energy can be removed from the tidal system before it affects ecosystem functions?
- ✓ Effects on fish, fish habitat and fishing activity (e.g. exclusion zones)
- ✓ Other bio-physical effects
- ✓ Will marine renewables contribute significantly to rural development sustainability? How?

# Key SEA Recommendations

- R 1: Sustainability principles to guide decisions
- R 2: Allow pilots under certain conditions
- R 4: Research program needed to fill gaps
- R 13: Incremental approach to development
- R 14: Tidal must be part of a bigger sust. energy strategy
- R 19: Other users must be treated fairly
- R 23: Benefits must be distributed fairly

# Some Observations about the Process

- Parallel process for research farm was a serious threat to the credibility of the SEA process
- Government lived up to the letter but not the spirit of commitment not to make decisions about pilots before the end of the SEA
- Role of government in OEER leaves questions about the independence
- Some government people only engaged at the start and end, leaving questions about the buy in and appreciation for the process

# Some Observations about the Process

- Fishing industry dominated among non-government reps
- Not all stakeholders were fully engaged (aboriginal, shipping, tourism)
- Not all members had sufficient capacity to engage effectively
- Round table was too large to be really effective
- Time, capacity and resource constraints prevented SEA from dealing effectively with some of the more important issues, such as rural development opportunities and cumulative effects

# Questions about the Future

- Will there be ongoing engagement of the public & key stakeholders as we move to individual projects?
- What will/should be the effect of the SEA on existing decision making processes (such as project EA and regulatory approval)?
- Will SEA be a catalyst for integrated planning?
- How to ensure meaningful implementation of these high level recommendations?
- Shelf life of the SEA results?

# Questions about the Process

- Was the process sufficiently independent?
- To what extent was the effectiveness of the process limited by its ad hoc nature?
- How much was the process affected by the parallel process for the construction and operation of the research facility?
- Was the process undermined by time and resource constraints, which resulted in limited progress on how to maximize rural development and community benefits?
- Can & will these limitations be overcome through ongoing engagement?
- What are the lessons learned for SEA more broadly?

# Regulatory Flow-Chart For Tidal Projects

R.F.P. Process

Proposals reviewed by provincial regulatory agencies  
Preliminary "award" to successful proponents (DNR)  
Public notice with 30 comment period  
Regulatory Processes initiated, coord. by Tidal S.C.

**Provincial**

- Crown Lands Act
- Environment Act
- Beaches Act
- Endangered Species Act
- Parks Act
- IRM process
- Fisheries & Coastal Resources Act
- Electricity Act
- Municipal Government Act
- Assessment Act

**Federal**

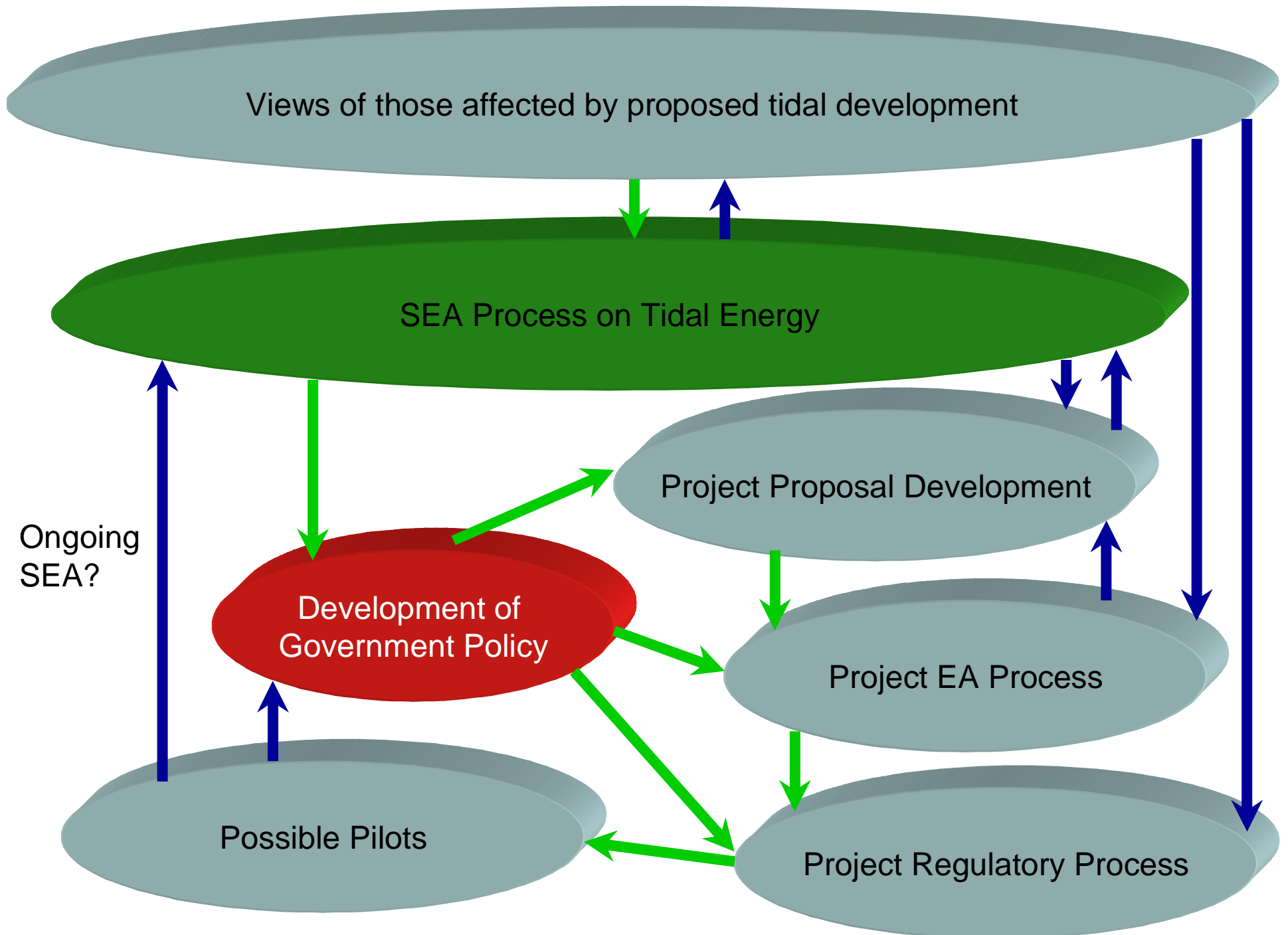
- Env. Canada
- NWPA
- NEB
- Fisheries & Oceans
- CEAA

**Others**

- Municipality
- Upland owners
- NSPC (access/use)
- URB

NS DNR Issue Authority upon expiry of 30 day public comment period  
Installation (conditional upon DNR's receipt of permits and approvals)

Monitor, Follow-up, ensure ongoing link to SEA



For more information



[www.bayoffundysea.ca](http://www.bayoffundysea.ca)