## When does a new policy mix replace an older one? The development of the oil sands reclamation regime in Alberta, Canada.

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When, why and how do policy mixes change? Much of the contemporary interest in policy mixes is focused on first, distinguishing simple policies from more complex policy mixes and, second, developing criteria to assess the likely performance of particular mixes. These are important and necessary analytical tasks. However, the next step is understand the reasons why policy mixes change and to determine whether the change is an improvement. These are not simple tasks. Even the identification of change in a policy mix is challenging, given that much of the existing literature focuses on the adoption or deletion of single instruments or on the kind of wholesale shift in policy goals that Peter Hall described as a change in policy paradigms.

In this paper, we analyse the development of a complex policy mix out of a "simple goal, single instrument" policy regime in the case of reclamation and remediation of the Alberta oil sands. Using an innovative framework that combines static analysis of the elements of a policy mix drawn from the policy design literature with dynamic analysis of how those elements change over time based on the work of the historical institutionalists, we identify three distinct periods of policy development. We demonstrate the importance of the processes of layering and conversion in increasing the complexity of policy mixes but also draw attention to mechanisms that adjust the relationships between elements to enable complex policy mixes to continue to function for decades. The case of the Alberta reclamation regime also provides at least one example of the wholesale replacement of a policy mix deemed to be overly complex and unwieldy with a new mix, together with evidence that layering, conversion and adjustment begin in the new mix almost immediately.

A particular feature of the Alberta oil sands reclamation case is the effect of introducing environmental assessment processes and ecological ideas into an older policy mix based on the goal of returning reclaimed land to "productive" status. In addition, however, the case illustrates the underlying logic of policy mixes, that is, designing policies with a sufficiently complex mix of elements to address increasingly complex policy problems, and the challenges that complexity presents to policy makers in a case of very intense environmental impacts on a massive scale.