



E-Merge – Process Table (Version 1)

Phase & Step	State Energy Office (SEO)	Environmental Agency (DEP)	Utility Commission (PUC)	Stakeholder Involvement	Notes
PHASE I	ESTABLISHING GOALS & BASELINES				
1	Identify goals from state energy office perspective	Identify state public health and welfare goals affected by energy-related emissions	Identify state energy goals for electric system	Plan for stakeholder involvement, which will be necessary in implementation (see Step 6) if not sooner.	<ul style="list-style-type: none"> Initiating agency needs address how best to engage the other agencies. Establish timeframes jointly, because planning must include what <i>and</i> when. Stakeholder involvement should occur as early as possible, even if informal at first.
a Indicies		Apply federal requirements, or go beyond them to reduce risk of future nonattainment and/or achieve more-protective public health goals?	Determine state indicies for: <ul style="list-style-type: none"> Reliability? Reserve margins? (Least) Cost? 	Stakeholder involvement may be valuable here.	<ul style="list-style-type: none"> Can PUC goals for utility IRP processes be applied here, allowing <i>E-Merge</i> to leverage existing state efforts? Consider how impacts of power sector transformation (PST) will play out.
b Targets		Specify target levels by pollutant	Specify targets for each goal	Stakeholder involvement may be valuable here to diminish conflict later.	<ul style="list-style-type: none"> May want to apply options or a range instead of single point values as initial targets. Metrics may be difficult for some goals. Consider utilizing performance-based regulation approaches.

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c Other Info		Consider: <ul style="list-style-type: none"> • What share of AQ issues relate to EGU emissions today? • What if any future EGU actions are planned? Impacts? • What if any “good neighbor” obligations exist? 			
2	Determine baseline levels for state energy office goals	Determine baseline levels for air quality goals	Determine baseline levels for electric system goals		<ul style="list-style-type: none"> • Having identified goals in Step 1, identify metrics for assessing current and future status.
a Metrics, Status	Identify metrics and existing levels for each goal identified	Identify ambient air quality (AQ) levels (or EPA design values) for each pollutant	Identify metrics and existing levels for each goal		<ul style="list-style-type: none"> • Some levels (and/or metrics) may not be known (or consensus may not exist); need to determine path forward in these cases.
3	Compare baseline levels to goals	Compare ambient AQ levels (or EPA design values) for each pollutant to goals	Compare baseline levels to goals identified		
a Goals Met?	Does each metric meet the goal?	Does ambient AQ level meet the goal (or EPA design value) for each pollutant?	Does each metric meet the goal?		
b On-the-Books?	If not, are there “on the books” policies that will cause each goal to be met?	If not, are there “on the books” policies that will cause the goal for each pollutant to be met?	If not, are there “on the books” policies that will cause each goal to be met?		
c Deviation	If not, determine what additional work is needed to achieve each goal	If not, determine what additional ambient AQ improvement is needed for each pollutant	If not, determine what additional work is needed to achieve each goal	Stakeholder involvement may be valuable here.	

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4	If necessary, conduct appropriate modeling to help determine ways to meet energy goals	If necessary, conduct AQ modeling to determine the amount of emission reductions needed to achieve ambient AQ improvement	If necessary, conduct energy system modeling to determine what resource mix(es) can achieve least-cost planning and reliability goals		<ul style="list-style-type: none"> • If desired, conduct economic modeling reflecting optionality. • Note that choice of models is important, as data and resources to support modeling efforts are often significant.
PHASE II	IDENTIFY AND RANK MEASURES/OPTIONS				
5	Identify supply curve of measures to help achieve goals	Identify supply curve of measures to help achieve necessary emission reductions	Identify supply curve of measures to help achieve goals	Stakeholder involvement may be especially helpful in identifying options and measures	<ul style="list-style-type: none"> • A “supply curve” lists options, their magnitude, and cost, sorted least-cost to highest-cost. • When available, run this process through a system dynamics optimization model against a database of potential emission reduction measures until target emission reductions <i>and</i> energy goals are reached at least cost. • Consider whether other sectors could help achieve goals (e.g., transportation) • Consider impacts of policies to boost beneficial electrification in other sectors (e.g., transportation, space and water heating, etc.)
a Review Supply Curve	Collaboratively review supply curve to determine energy savings and co-benefits performance achievable through cost-effective energy efficiency (EE), demand response (DR), renewable energy (RE), and other measures			Stakeholder involvement may be valuable here.	

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b Translate Into Metrics	Translate options into performance metrics against energy office goals	Translate options' energy savings into emission reductions	Translate options into performance metrics against goals (reliability, cost, etc.)		
c Compare To Goals	Agree on preferred options and compare overall performance to goal levels	Agree on preferred options and compare their total emissions reductions to target levels	Agree on preferred options and compare overall performance to goal levels	Stakeholder involvement may be valuable here.	
d Model & Iterate	Conduct economic modeling to confirm goal achievement; iterate if necessary.	Conduct air quality modeling to confirm goal achievement and to satisfy EPA; iterate if necessary.	Conduct energy system (dispatch) modeling to confirm goal achievement; iterate if necessary.		<ul style="list-style-type: none"> Note that modeling often carries significant costs; there may be ways to estimate iterative results.
PHASE III	IMPLEMENTATION				
6	Conduct stakeholder process(es) to consider what measures should be adopted, what revisions may be necessary, etc.			If stakeholders were not involved previously, they should be now. If only a limited number of stakeholders were involved previously, expand to be fully inclusive.	<ul style="list-style-type: none"> If stakeholders were fully engaged in the process up to this point, this step may be unnecessary.
7	Implement recommended measures.				
a EPA Approval		Ensure approvability by EPA under the Clean Air Act, etc.			<ul style="list-style-type: none"> Suggest inviting EPA to participate in the full process and provide feedback throughout.
b Adopt Regs	Conduct proceedings and/or outreach necessary to implement measures associated with energy goals.	Conduct regulatory proceedings necessary to implement measures associated with air quality.	Conduct regulatory proceedings necessary to implement measures associated with the electric system.		

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PHASE IV	EVALUATION				
8	Identify process streamlining that E-Merge may have enabled	Identify regulatory streamlining that E-Merge may have enabled	Identify regulatory streamlining that E-Merge may have enabled	Stakeholder involvement may be valuable here.	<ul style="list-style-type: none"> • Example: Integrated process may be more difficult and costly than for any single agency or any single pollutant alone, but less so than for each agency to handle each goal and each pollutant individually.
a	Estimate savings (or costs) from <i>E-Merge</i> process regulatory streamlining	Estimate savings (or costs) from <i>E-Merge</i> process regulatory streamlining	Estimate savings (or costs) from <i>E-Merge</i> process regulatory streamlining		<ul style="list-style-type: none"> • Sum net savings and costs across agencies to provide estimated total benefits or costs.