NOTE: The following was written by Dominique Gomez, a Public Policy Fellow working at NMED during spring and summer of 2007. She was asked to prepare a list or catalog of all conceivable policy options for implementing greenhouse gas reductions from oil and gas processes. This list has not been edited by NMED and does not represent any policy decision by NMED, but is provided for informational purposes only.
- Brad Musick, NMED Air Quality Bureau

Background:
It seems that the main barriers to implementation of many of the available technologies to reduce the greenhouse gas emissions in the oil and gas industries are financial. Although many of the available and recommended technologies are money savers, and even have relatively short payback periods, the initial investment does not make financial sense to many companies without additional incentives or requirements.
The idea is thus to provide incentives or financial aid to offset the initial costs of implementing new technology. An obvious alternative would be to require the changes, thus leveling the playing field for industries within the state. The best option may be a combination of the two approaches: require some specific retrofits or use of new technology while providing incentives for others.
In addition to technology, some training and encouragement of better maintenance may help to reduce emissions as well. Like installing retrofits and new technology, higher maintenance standards can either be mandated by regulation or encouraged through financial incentives.
Following are some possibilities for ways to offer financial incentives:

Method of Reduction	How it works	Examples of implementation	Pros	Cons	Comments
Revolving Loan Fund (RLF)	A fund is set aside which businesses can apply to use for relevant projects. Other loans can then be made through repayments and interest on the initial loans. The initial investment will only be recouped if no more applications for projects are made.	EPA's Drinking Water State Revolving Fund http://www.epa.gov/safewater/dwsrf/index.html ; Cascadia Loan Fund	Does not take an extremely large initial investment; Compared to standard loans, RLFs usually have lower interest and take on higher risk	Not the most time efficient method; Most entities will have to wait for loans to be repaid before beginning their own; Not well suited for long-term	

		http://www.cascadiafund.org/)	projects.	projects.	
Break on Regulation – Shorter Reporting Form	Companies that comply with targets on time are given the option of quicker regulation requirements.	EPA's Toxic Release Inventory http://www.epa.gov/tri/tridata/modrule/phase2/forma.htm	Does not take large investment; will actually save department time and money	Depending on difference between regulations, may not be large incentive; department must meet regulatory duty.	
Educational Programs to decrease emissions through behavioral change	Educational guides or classes can be made available to all companies to reduce emissions through behavioral change, especially increased maintenance	This is a recommended step by EPA's Gas STAR program: http://epa.gov/gasstar/bmp.htm	Does not involve costly new technology; better maintenance will benefit business in other ways	May not make significant impact if best practices are already implemented	Should probably be part of strategy, but not main component.
Subsidies for New Technology/ Retrofits	Subsidies, or grants, are provided for companies to invest in more efficient technology. Can also come in the form of a tax credit or deduction. *Flexibility*: Subsidies can cover anything from more efficient refrigerators to much larger and more expensive pieces of equipment.	Energy Policy Act of 2005 for Qualified Hybrid Technology;	Allows companies that might not otherwise be able to afford new technology to purchase it;	Offered uniformly, companies that may be able to afford or were planning to purchase technology may rely on grant;	
Carbon Tax	A standard tax is placed on emissions of greenhouse gases that comes from the burning of fossil fuels. In this case, can be placed on supply side industry.	(Consumer side tax): Boulder, CO Initiative 202; Sweden since 1991; Other	Will not lead to the same price fluctuations that cap-and-trade policies could	As only state wide, will put New Mexico at a disadvantage	For some (albeit very pro-carbon tax) information,

		Scandinavian countries	create; many possibilities for creative use of funds generated		see http://www.carbontax.org
Cap and Trade Policies	An upper limit is placed on the amount of carbon emissions a company can produce. Companies able to reduce below the cap can trade their extra emissions to other companies for profit. *Flexibility* – Allows for flexibility on whose emissions are capped (upstream/downstream)	1990 Clean Air Act SO_2 provision;	Because of cost differential in reduction, cap and trade may be more cost efficient than simple reduction mandates;	Will tax more heavily on those unable to reduce; may cause price fluctuations during times of high energy demand	
Transparency Requirement	GHG reporting is already being required, the level of transparency for these reports, however, is still being decided. High levels of transparency can help to encourage reduction.	EPA's 1986 Emergency Planning & Community Right to Know Act	No financial investment needed.	No guarantee of reduction. Will mostly rely on public pressure to reduce; will most likely have strong opposition from some industries.	Does not allow for much privacy
Tax Credits for production of renewable energy	A set amount of money can be credited in state taxes based on the production of energy from renewable sources.	Federal Energy Policy Act of 2005; New Mexico's Renewable Energy Tax Credits	Could encourage oil and gas industry to begin investing in this new field/	Many such programs are already in place, including several in New Mexico;	
Tax Incentive	The EPA Gas STAR Program is a		Program is	Only targets	

for Participation in EPA's Gas STAR	voluntary partnership between the EPA and oil and gas industry to promote the use of low cost and effective technologies that reduce methane emissions.		already in place; research backing costs and effectiveness of technology already provided;	methane; industry has historical reasons to mistrust EPA	
Legislation requiring reduction	State legislation requires reduction of GHG emission by a set percentage over a set period of time.		If all industry required to do so, playing field will be level; standard procedure for making change	Does nothing to help industry; may hurt smaller industries or industries with special reasons for emissions; may be more costly than voluntary scheme	

Longer analysis of options:

Revolving Loan Fund

A Revolving Loan Fund is a fund of money that is offered to companies to help with initial costs of new initiatives. Amounts may vary based on need and availability. In general, the interest on the loan is substantially lower than commercial loans. As the loan is paid back, the money is then used to fund new companies. Thus, a relatively small amount of initial capital is used over time to fund initiatives at many different companies.

How it would work in this case:

A revolving loan fund to reduce greenhouse gas emissions would work by helping companies with the initial costs involved in updating relevant technologies. Although most oil and gas companies can currently afford many of the retrofits and technological implementations (such as those suggested by EPA's Gas STAR), changes have often not been made up until this point because of a concern for missed opportunity costs.

One drawback of this policy tool is that progress, or the number of companies served, is slower than would be with a larger capital fund. A revolving loan fund approach would most likely only be suitable for shorter term projects, such as ones that have a payback of less than one year.

Estimation of costs:

Cost of administering the program may be covered by the interest from the revolving loan fund. The amount of capital initially placed in the revolving loan fund can vary based on how many companies should be served in a given period, and what amount of capital is awarded to each company.

What it could be used to fund:

Retrofits
Subsidy when building new facility to have most efficient technology
To begin new programs to sequester carbon
Research and Development in relevant areas
Cost of getting into Climate Registry?

Timeframe:

Because a revolving loan fund offers loans in rounds, the time frame for this approach is longer than a larger one-time widely available grant or incentive.

Subsidies for New Technology

Providing a subsidy for new technology that will reduce greenhouse gases may have similar effects as the revolving loan fund action, but will allow companies to access this money on their own schedule without the restraints as the RLF. Because it provides money to more companies at one time, it will have a larger initial impact but will also have require more money up front.

What it could be used to fund:

Much like a revolving loan fund, the money from new technology subsidies could be used to fund a wide variety of retrofits or other new equipment. A list of qualifying equipment could be created and frequently updated, or any equipment that falls under certain requirements could qualify. The list of methane-reducing technology provided by EPA Gas STAR is certainly a start, although other implements should also certainly be considered.

Carbon Tax

Passage of a carbon tax would place a cost on the emissions of carbon produced from the use of natural gas, coal and oil. A carbon tax has already been put in place in several countries including Sweden, and in the town of Boulder, CO. Proponents say that a carbon tax will shift use of fossil fuels towards renewable energy much more effectively than simply providing tax incentives or subsidies on renewable energy. Tax money that is collected can be used in a variety of ways to further reduce greenhouse gas emissions, otherwise mitigate the effects of climate change, or to reduce the effect of the carbon tax on less-affluent families.

One scenario reports that a uniform rebate to all families paying carbon taxes will help less affluent families (who by virtue of having smaller houses and in general using less energy) to completely, or near completely, cover the extra cost of the carbon tax. A similar strategy could help smaller companies with the costs of a carbon tax. Taxes could be set on either production or usage.

http://www.carbontax.org/

Cap and Trade Policies

Currently in plan for New Mexico (?). This strategy places a maximum amount of carbon emissions on a given company (perhaps by amount of energy produced, or a baseline of a given year). Companies that then reduce carbon emissions more than required are allowed to "sell" this amount of carbon to other companies that have not reduced. A similar system is already in place in the European Union.

Proponents of cap and trade say that this system will ease the strain on companies by allowing those who can reduce more readily to reap the financial benefits while providing a safety net for companies that find it difficult to heavily reduce right away. Opponents say that a cap and trade system will create high fluctuations in energy prices, leading to more energy crises.

Transparency Requirement

There is some evidence to believe that simple transparency will go a long way to reducing the greenhouse gas emissions of many companies if public pressure is sufficient. Greenhouse gas reporting is the first step to using transparency as a tool to push voluntary reduction. Without legislation, however, this information could be considered confidential. Many companies may vehemently oppose full transparency in regards to their greenhouse gas emissions. However, many companies already voluntary disclose greenhouse gas emissions through various registries or other agreements.

It is also not certain that there will be enough public interest in these emissions that companies will be forced to reduce. While public concern over climate change is considerable and continues to grow,

For an article outlining the benefits of transparency, see: http://www.brook.edu/comm/policybriefs/pb161.htm

Tax Incentive for Participation in EPA's Gas STAR

While participation in EPA's Gas STAR Program is voluntary, some tax incentive from the state to participate could help reduce emissions of methane. EPA's Gas STAR is available online at www.epa.gov/gasstar and offers best-practices and an analysis of various technological retrofits to reduce methane. A requirement or financial incentive for companies to participate in this program could help in methane reduction.

Legislation requiring reduction

Legislation that simply requires reduction without any extra provisions for assistance in reduction may be effective. It is clear that programs already in place, such as the EPA Gas STAR program, which offer assistance in voluntary reductions are not completely effective.