THE PACIFIC FOREST TRUST

Our Private Forests are Our Public Treasures.

TESTIMONY OF LAURIE A. WAYBURN
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BEFORE THE SUBCOMMITTEE ON RURAL REVITALIZATION, CONSERVATION, FORESTRY AND CREDIT

COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY

"CREATING JOBS WITH CLIMATE SOLUTIONS:

HOW AGRICULTURE AND FORESTRY CAN HELP LOWER COSTS

IN A LOW-CARBON ECONOMY"

UNITED STATE SENATE

MAY 21, 2008

Good afternoon, Madam Chairman, Senator Crapo and members of the Subcommittee.

Thank you for holding this important hearing to address the opportunities for farmers and forest landowners in U.S. climate policy. I am honored to testify on the potential of private working forests in addressing the challenge of climate change. We look forward to working with you as you integrate the agriculture and forest sectors into an economy-wide climate strategy.

I am President of The Pacific Forest Trust, the nation's leading non-profit organization dedicated to conserving America's private working forests for their many public benefits, including climate stabilization. The Pacific Forest Trust owns, manages and

conserves working forest lands. We have directly conserved working forestland valued at over $160 million dollars, and worked with owners on conservation and stewardship planning on over several million acres in the West and Canada.

In California, The Pacific Forest Trust has been instrumental in advancing the role of forests in the state's climate change programs. We were asked by the state to develop the Forest Protocols of the California Climate Action Registry (CCAR) through a broad stakeholder process, leading to their adoption last October by the California Air Resources Board as the first voluntary early action measure under AB32, the Global Warming Solutions Act of 2006. We are now engaged in the stakeholder processes advising the California Air Resources Board as it designs the full implementation of AB 32, as well as for the design of the Western Climate Initiative, which has the goal of developing a comprehensive climate strategy in seven states and three Canadian provinces. The Pacific Forest Trust has been engaged in the Northeast states' Regional Greenhouse Gas Initiative (RGGI) and Washington State processes as well. We have worked on these issues surrounding the role of forests in climate change nationally since 1993.

In my remarks today, I will address the potential of private working forests to reduce net carbon dioxide emissions both directly and through offsets. I will also share the lessons learned from our experience in California and across the country with forest protocol and climate policy development and our own forest management project certified by the CCAR that is in the process of selling some 250,000 tons of emissions reductions in the voluntary and pre-compliance carbon market. Our experience shows that forest emissions reduction projects are a realistic, cost-effective, practical market tool that can deliver real climate gains and also conserve forests and their many economic and public benefits.

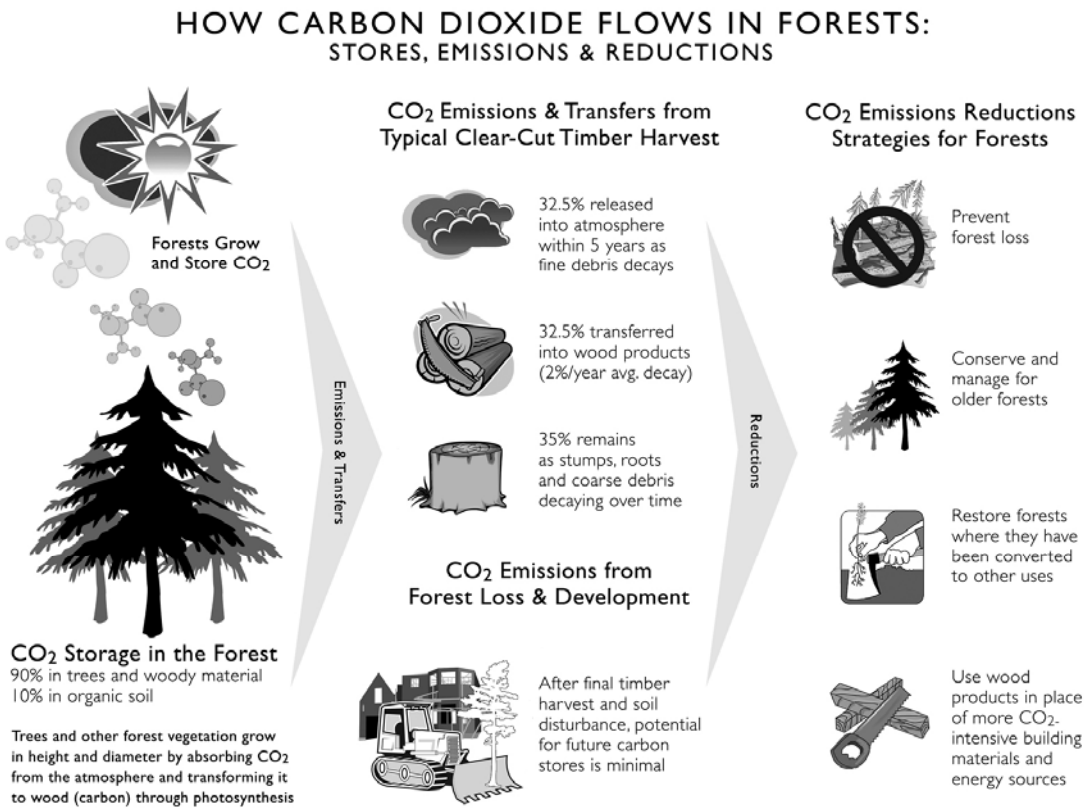
By including forests in climate policy in an integral way, the U.S. can achieve significant, synergistic gains for climate mitigation and adaptation, landscape level forest conservation and restoration, more sustainable forest management, and, potentially, alternative fuels. With a comprehensive strategy, tens of billions of CO_2 emissions reductions are possible from our forests over the next 50 years. The U.S. could demonstrate international leadership by designing a global model for the incorporation of the land and forest sector in climate policy, facilitating integration with other economic sectors and creating meaningful new markets for conservation, restoration and sustainability.

U.S. Forests and Climate Change

It is now clear to the scientific community that the earth is warming and that it is doing so faster, more intensely and more broadly than predicted. Leading scientists globally, including our own Jim Hansen, have stated that our global inputs of CO_2 are, in fact, higher than thought, and that therefore we need to reduce emissions more significantly than previously thought; that we must act across all significant sectors of CO_2 emissions; and that we must act swiftly to implement solutions if we are to achieve climate stabilization.

The U.S. must address the challenge of climate change in a comprehensive, effective, and economy-wide manner, recognizing forests are and have been a significant source of CO_2 emissions as well as an important mitigation tool. There are several key data points to remember as the Congress addresses climate policy over the next several years.

First, forests absorb CO_2 as they grow and store CO_2 as woody tissue for centuries and even millennia. Forests release CO_2 when they are disturbed. Forest harvesting releases 2/3 of the CO_2 stored in the trees over time; one third within five years and another third over time as stumps and woody debris left behind decay. The final third is transferred to wood products, where, on average 2 percent of this carbon is released per year through decay.



Forest loss and depletion accounts for roughly 25 percent of worldwide CO_2 emissions today and was the source of 40 to 50 percent historically. The loss and depletion of temperate forests, such as ours in the U.S., is a key contributor to today's atmospheric concentrations. Because carbon emitted into the atmosphere takes at least 100 years to cycle back into ecosystems, there is still CO_2 in the atmosphere today from U.S. forests cleared and harvested in the 1800s. Now, with the loss of virgin forests in the tropics as a key new source of forest related emissions, tropical deforestation is becoming a serious issue in the international climate negotiations, opening an important door to bring developing countries into the global climate policy solution.

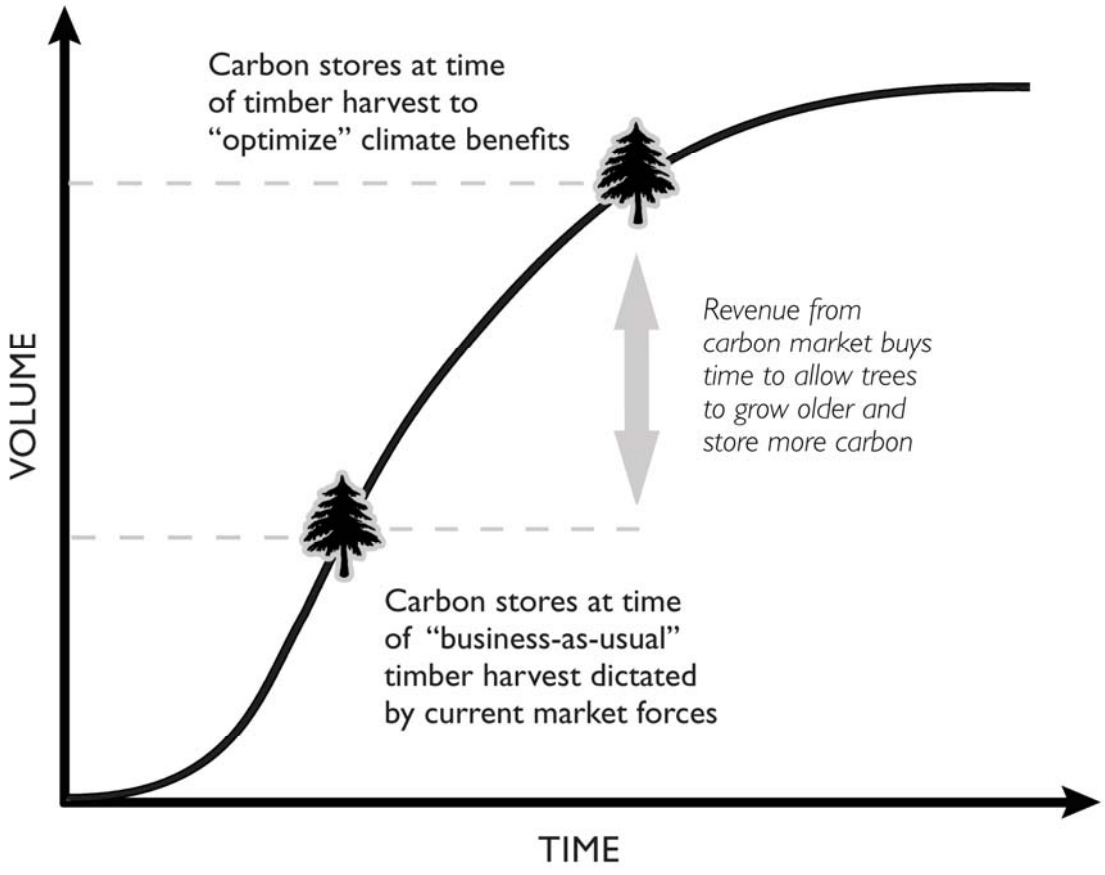
In the U.S., significant greenhouse gas emissions occurred with initial harvest of old growth forests as well as with the conversion of land to development and agriculture. Conversion to development causes not only the emission of biological stocks in those forests, but also the loss of any future sequestration. CO_2 emissions are still generated

from on-going land conversion and forest depletion, primarily if not exclusively on privately owned forestlands.

Forest carbon stores on public lands in the U.S. are now managed to be relatively stable to increasing over time—an important asset in the U.S. carbon bank. However, the private forest "sink" is declining as forests are being lost to development at a rate and scale not seen for a hundred years. One and a half million acres of private forests are lost annually in the U.S. to conversion and development; more private forestland is lost to conversion than any other type of land. Once forests are converted to other uses, not only do CO_2 emissions result, but also future carbon sequestration potential disappears.

In addition, most private forests in the U.S. currently store significantly lower carbon stocks than they could naturally maintain. Therefore, this sector is unique because of its very significant potential to re-absorb its own and other sector's CO_2 emissions from the atmosphere through actions to increase carbon stores across the landscape.

If done well, forest management and restoration can sequester vast amounts of carbon for long periods of time, often hundreds of years. New research with advanced eddy flux technology that measures the release and uptake of CO_2 from forest ecosystems has shown that older forests, even old growth, continue to take up massive volumes of carbon. Further, recent research on western dry forests from Woods Hole Research Center again has shown that older forests hold significantly greater carbon stores than younger forests. As a practical example, extending harvest rotations to allow trees to grow older before timber harvest enables them to absorb more carbon, maximizing climate benefits while continuing to supply sustainable wood products.



Generalized forest carbon stores over time for U.S. forests

The simple analogy to explain this strategy is banking. Planting a new forest is like opening a new bank account with very little money, but with a high interest rate. Managing an older forest for carbon is like holding on to a large bank account with a lower interest rate. The older forest bank account will add value – and carbon volume – more quickly than the new forest account. To fight climate change, we need to both grow older forests and plant new forests to restore our depleted forest carbon banks. By doing so we can have a significant impact on climate, yield more timber and other forest products over time, and produce new alternative energy stocks as well.

Engaging the Forest Sector in U.S. Climate Policy

Federal climate change policy should address forest conservation *and* sustainable forest management. This is because we need to avoid the increasing greenhouse gas emissions from forest conversion that is growing again, and because we have the ability to significantly increase forest carbon stocks from our existing forests. This strategy can reduce greenhouse gas emissions, increase carbon stocks in forests, expand forest conservation and foster the resiliency of our forests to climate change simultaneously – while reducing overall costs of climate policy. Like any other economic sector, forests can provide real, additional, permanent, verifiable and enforceable greenhouse gas reductions. By setting strong standards, these reductions can meet a high level of rigor and accuracy so that they are equivalent to reductions in other sectors.

The U.S. could reduce net CO_2 emissions by tens of billions of tons in the next 50 years through several broad mechanisms:

- Reduce forest loss
- Restore forest carbon banks
- Reforest former forests

The provisions of a economy-wide greenhouse cap and trade bill should increase the function of forests as enhanced carbon sinks and reduce their role as sources of CO_2, while increasing incentives for landowners to manage their forests for climate benefits through the emerging market in carbon credits. A carbon market can provide added revenue for landowners to permanently conserve more forests and practice the type of management that results in carbon-rich forests. In this market, forest owners committed to increasing net carbon stores can sell these gains to those who cannot otherwise reduce their carbon dioxide emissions. There are also millions of acres that were formerly forests but are now marginal land in other uses that could be restored with financing from the market.

Incorporating forest strategies into national climate policy will also bolster the sustainability of our domestic timber supply in an environmentally sound way, providing added return to forest owners and, in turn, sustaining forest sector jobs and creating new positions related to the carbon market. New job opportunities can be significant. For example, the Washington State Climate Advisory Team estimated that by implementing a suite of forest and agriculture climate strategies, nearly 5,000 new jobs would be created in those state sectors by 2020. If we consider the many other

states with forest and land resources, that job creation figure could rise to well over 200,000 new jobs nationally.

Further, in the transition to a carbon constrained economy, forests can play an important near-term role since many of the energy technologies that will reduce carbon emissions in the future are not ready to deploy in the short run and forest conservation and sustainable forest management can deliver results immediately. When forest conversion is reduced, there are immediate results in reduced greenhouse emissions.

A robust carbon market that recognizes verifiable gains in forest sequestration can reduce economic costs of climate change mitigation significantly. While there may be differences in the modeling and the underlying assumptions, several analyses of the cost containment of the offsets provisions in S. 2191, The Lieberman-Warner Climate Security Act of 2007, show real cost reductions. The EPA analysis shows allowance prices 2.5 times greater in 2020 and 2030 if no offsets are allowed. MIT's model of S. 2191 assumes 15 percent domestic offsets and shows that if offsets are not permitted, the resulting allowance prices would be 15 percent higher in 2020 and 2030.

Managing forest resources to increase carbon stores can also help increase resiliency of forests to the effects of climate change, including pests and fire. Among others, actions that can lead to both increased carbon stocks and resiliency include targeted thinning or prescribed burns (reducing catastrophic fire risk and leaving bigger trees with more room to grow), maintaining and restoring native species biodiversity, replanting and increasing riparian buffers, and reducing forest fragmentation. Increasing resilient ecosystems will further protect and enhance other key forest services, such as water and air quality, fish and wildlife habitat, and open space for recreation.

Changing climate conditions are not the only new stress on forest ecosystems in the United States. With the nation moving towards energy independence and reduced greenhouse gas emissions, cellulosic ethanol and woody biomass for energy will become more important, offering another potential stress on private forests. However, bioenergy can also provide a new significant source of revenue to help keep forestlands in forest use. With more people and new infrastructure needed to utilize wood as a renewable energy resource, more jobs would be created as well. To avoid perverse outcomes and maximize climate and economic benefits, energy policy and forest climate policy should be integrated so that the impacts of each set of policies on the other are understood.

Forest types and management practices vary broadly around the country. There is no question, however, that each region can reduce forest-based emissions and can generate increased carbon stores. If we design climate policy from a national, landscape-wide perspective, we can ensure the best strategies are applied in each region as appropriate.

While developing national forest climate policy, effectiveness will also depend on understanding private forest ownership patterns and how they are changing. An estimated 100 million acres of family owned forests are going through a process of intergenerational transfer, the integrated pulp and paper companies are divesting land assets, and real estate investment trusts and TIMO's have become the dominant large owner type. Optimally, a forest-climate policy must recognize these new market dynamics in creating mechanisms to increase net, durable carbon stores, conserve forests and create a new source of revenue for forest landowners.

The Mechanics of Harnessing the Climate Benefits of Our Forests

To make a real difference to the atmosphere, as well as to be successful environmentally and financially, forest climate policy requires rigorous accounting and measurement standards. Changes in U.S. carbon stores can be precisely measured, and the process is based on over a hundred years of research, using methods that are well accepted and in wide use. In addition, our forest sector is grounded in America's strong system of property rights as well as other legal and governmental institutions.

When developing forest projects, fundamental climate policy principles must be met. Forest carbon sequestration projects must be *real, additional, verifiable, permanent* and *enforceable*. To be successful environmentally and financially, these policies require a transparent, standardized accounting and measurement system, and one that differentiates between public and private land ownership.

In the United States, we have the capacity to create a robust system to meet these goals. The U.S. has the scientific expertise, institutional structures, and legal frameworks necessary for a system to account for real change annually in forest carbon projects. Uncertainties about the capacity in some of the tropical forest nations to create real, verifiable carbon credits have raised concerns about projects in our domestic temperate forests. In fact, in the U.S. we can produce high-quality projects with "a ton is a ton" equivalency to other sector reductions. Tropical deforestation projects may need a more

basic approach of verifying that forests are simply still there, as quantification and legal and reporting systems are developed.

Overall, the most important issue is that credits be given for carbon storage that is *additional*. To determine additionality, there must be a baseline. Baselines are long-term projections of what would have occurred in absence of a project, often called "business-as-usual." A standardized approach to establishing project baselines is important because it is objective and may be replicated consistently. Carbon credits would be given for stores above the baseline, which would be that of existing law or best management practices, also known as "regulatory additionality". Within a set of standard guidelines for calculations, baselines for forest projects should be established on a state-by-state basis, since states and counties regulate private forests.

As with any greenhouse gas emissions reduction in other sectors, the reduction should be permanent, and at a minimum have a benefit of 100 years. To address the issue that carbon stocks and future stores would be lost as CO_2 emissions if lands are converted to non-forest uses, conservation easements or other tools should be used to secure lands for climate benefits. In addition, buffer or reserve pools can be utilized to back-up any unexpected losses in forest carbon.

U.S. climate policy should also be consistent with international standards so that credits in a carbon market are fungible and will produce a higher value for landowners who trade them.

There is no reason to start from scratch on these issues. For years, forest scientists, economists, forest managers and policy officials have conducted careful analyses of the mechanisms to measure and monitor CO_2 emissions from forests. While there are still data gaps at the national level that must be addressed to increase the robustness of the system, the fundamental tools exist.

In addition to the development of the carbon market, there are other policies that can increase the carbon stock in U.S. forests, including land conservation and other environmental policies. A toolbox of federal financing tools could significantly increase the acquisition of conservation easements or support other mechanisms to achieve secure climate benefits through additional grants, tax incentives, and low-interest loans.

A comprehensive forest carbon policy could include a suite of policies at all levels of government to increase the stock of forest carbon and promote ecosystem resilience and adaptation. These polices would promote native species, dynamically stable forests,

and discourage deforestation permanently. Some of the possible policies that could be used in conjunction with a cap and trade policy include agriculture conservation programs. In the states, carbon management could be included in state forest plans and forests could be included in state climate plans. Further, forest fire prevention strategies should be designed to increase resilience of forests.

The California Experience

In California, we are in a transition from a voluntary system to a regulatory system as the state implements AB32, the Global Warming Solutions Act of 2006, which sets a mandatory target to reduce statewide greenhouse gas emissions to 1990 levels by 2020

Prior to AB32, in 2001 the state legislature passed SB 1771 which established a voluntary greenhouse gas registry, the California Climate Action Registry (CCAR). In recognition of the significant role of forests in climate change, the legislature subsequently passed SB 812, requiring the CCAR to integrate forests into the Registry, and develop protocols for forest emissions reduction projects. Following a four-year, broad multi-stakeholder process, the CCAR Board adopted the forest protocols in 2005. As I mentioned earlier, the California Air Resources Board then adopted the forest protocols in October 2007 as an early action measure in implementing AB32.

The CCAR's forest protocols are an important model for how to incorporate forests as offsets into climate policy. The protocols are a standardized and transparent accounting system for forest-based greenhouse gas emissions and emission reductions. For the first time in the U.S., indeed globally, these protocols provide state-backed rigorous methodologies for creating regulatory quality CO_2 emissions reductions through forest conservation, reforestation and working forest management.

Two years ago, on behalf of a private landowner, the Pacific Forest Trust submitted the first forest project to the CCAR for certification. The Van Eck Forest Project is comprised of 2,200 acres of working forest along the northern coast of California, producing significant climate benefits while continuing to provide a sustainable harvest of timber and high quality wildlife habitat. Restoring these forests to levels of carbon stock that it can naturally hold, the project is also providing synergistic other public benefits, such as for endangered species habitat and clean water. In fact, the property now has prospective habitat for spotted owls, which have recently been sighted.

In February of this year, following the review of our third-party verification results, CCAR certified the 2004 to 2006 emissions reductions for the Van Eck project. In total, the Van Eck project will provide at least an estimated 500,000 tons of CO_2 emissions reductions over the 100-year lifetime of the project. As required by the forest protocols, the project is further secured by a perpetual conservation easement, which runs with the property. Once certified, Natsource Asset Management LLC, a leading global emissions and renewable energy asset manager, purchased 60,000 tons of carbon emissions reductions because it believed that forest offsets are a key policy tool in the portfolio of activities to address climate change. The transaction is the first major commercial delivery of certified emission reductions under the California forest protocols.

This project is increasing the net asset value of the property by over $2,000 per acre, providing a very significant, complementary income stream to sustainable forestry for the landowner. This landmark project has been followed by several others, and the CCAR expects at least 10 more projects to be submitted this year. The Pacific Forest Trust is developing projects on over another 10,000 acres for private landowners this year, as well. It is important to note that the revenue from these carbon sales goes to the landowner, not the Pacific Forest Trust, for our goal is to incentivise them to remain forest stewards, and not yield to the trend to sell and convert their land.

These projects are an important step in developing a carbon market for U.S. forests that deliver real, lasting emissions reductions. Since this transaction, The Pacific Forest Trust has received countless inquiries about selling certified carbon credits. The demand for high quality, pre-compliance emissions reductions is strong and growing.

This market will create incentives for forest conservation, providing a new revenue stream for landowners while reducing carbon emissions from forest loss and increasing carbon stocks in forests in the United States. A federal cap and trade policy that includes forests will encourage the development of this market. As such, it must ensure that the market is financially sound and delivers real benefits to the atmosphere. Indeed such a rigorous program is essential to reduce risk, which, in turn is critical to market development.

Lessons Learned

- This is eminently doable. Forest offset projects are feasible now in the United States.

They can meet all of the goals of climate policy. They produce real, additional, verifiable, permanent, and enforceable increases in carbon stocks and reductions in net greenhouse gas emissions.

- High standards and compliance regimes will produce higher carbon prices for carbon credits for forest landowners. The Pacific Forest Trust sold Van Eck project carbon credits at three to four times the price of commodity carbon credits in other U.S. markets and at higher prices in the retail market.

- Demand for high quality carbon credits is high. The financial markets need risk reduction to grow, and demand additionality, permanence and third party verification.

- A private working forest can be managed to produce increased forest products and increased carbon stocks, as well as a create a resilient forest, increased supply of clean water, recreational opportunities, and habitat for fish and wildlife.

- Finally, the market works. Climate policy that incorporates forests to reduce emissions and grow carbon stocks can also reduce the costs of climate policy and create a new revenue source for landowners.

In conclusion, Madam Chairman, forests are not only a bridge to a low-carbon future; they are a key component of a long-term strategy in U.S. climate policy.

I appreciate the opportunity to testify this afternoon on the emerging forest carbon market and other strategies for increasing our forests' potential in addressing in climate change.

Thank you, Madam Chairman.