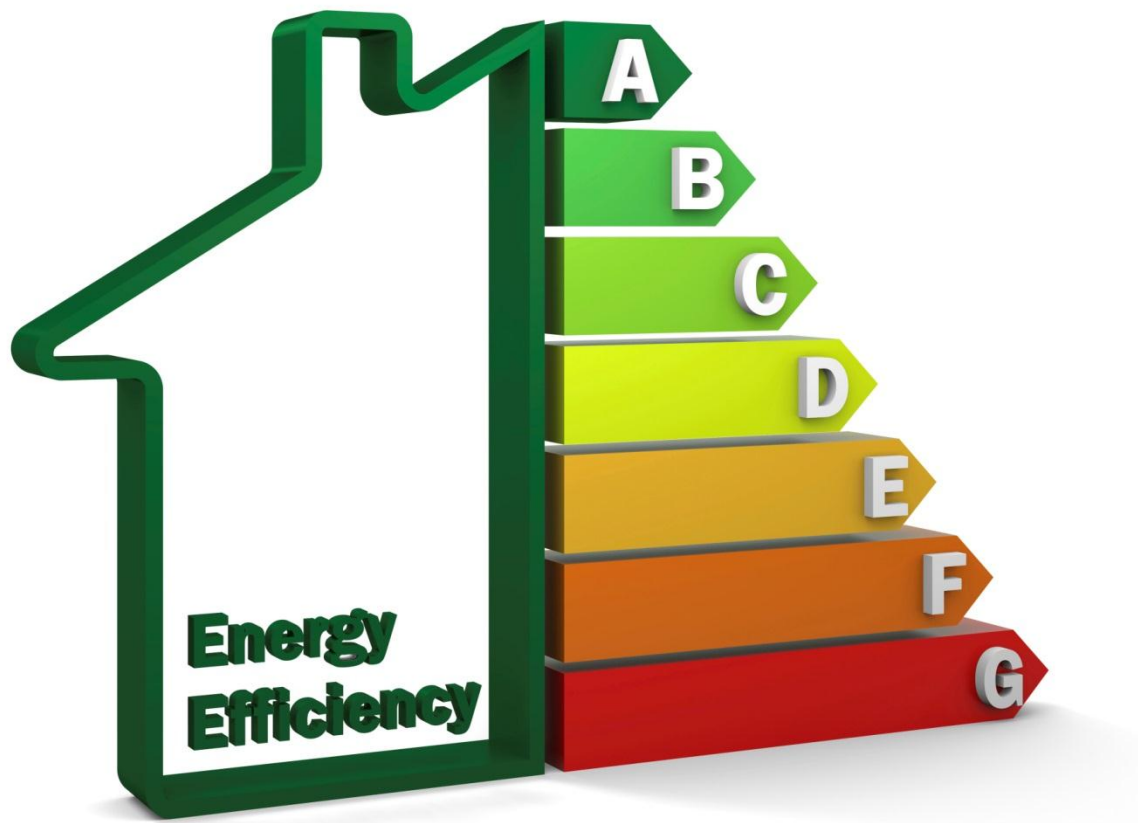


# Planet Earth's Guide to AV

## How AV is Going Green



This AMX White Paper describes the current state of Green initiatives as they pertain to AV equipment, and explains how the right AV strategy can be a major contributor to a successful Green initiative while contributing to a healthier bottom line.

## DEFINING GREEN

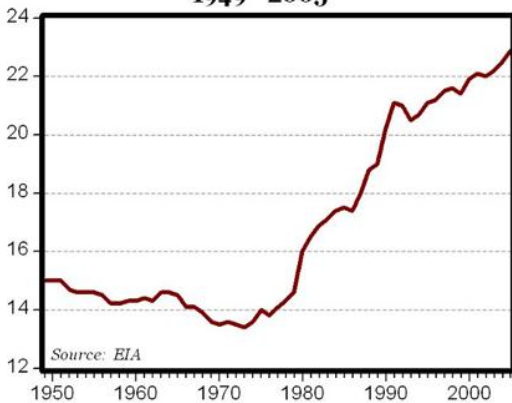
The world's population grew almost fourfold during the 20<sup>th</sup> century, from 1.6 billion to 6.1 billion. Since the year 2000, we've added another billion people on planet Earth. All told, the Earth's population has increased sevenfold since 1800.

Consider the implications of this staggering growth on resource utilization. Each new person requires food, electricity, petroleum and countless other limited resources throughout their lives. The good news is that we are continuously deploying technologies that make us more efficient consumers of these limited resources. To use the most popular example, the fuel economy of passenger cars has doubled since the mid-1970s.



At the same time, per capita income continues to rise in developing countries, which means an increasing number of people on the planet are able to afford motor vehicles and other energy-consuming items. While the U.S., European Union and China are by far the world's largest consumers of energy, other nations like Russia, India and Indonesia are rapidly increasing their energy consumption.

**Average Miles Per Gallon, Passenger Cars  
1949 - 2005**



Man's attempt to curb this dramatic increase in resource utilization has led to the focus on sustainability, or Green Initiatives. Simply stated, "green" refers to any initiative that results in more efficient resource utilization, especially in regards to burning fossil fuels. Green Initiatives have permeated virtually every industry, including AV. This White Paper describes AV's role in this crucial ecosystem.

## BUILDINGS TAKE THE LEED

Within the education space, initiatives around “Green Buildings” have become the primary catalyst for green initiatives. The U.S. Environmental Protection Agency defines Green Building as

*...the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as sustainable or high performance building.*



The framework under which green building initiatives are measured is called LEED (Leadership in Energy and Environmental Design). According to the U.S. Green Building Council, LEED is defined as follows:

*LEED is a third party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. Developed by the U.S. Green Building Council in 2000 through a consensus based process, LEED serves as a tool for buildings of all types and sizes. LEED certification offers third party validation of a project's green features and verifies that the building is operating exactly the way it was designed to.*

To learn more about  
LEED Certification, visit  
[www.USGBC.org](http://www.USGBC.org).

Despite originating as a U.S.-based initiative, LEED projects have been successfully established in over 135 countries. To achieve LEED certification, a institution must earn LEED points for satisfying specific building criteria in various categories related to energy efficiency, water efficiency and indoor environmental quality. All told, companies that achieve LEED certification in their key facilities enjoy substantial cost savings as a result of their superior energy efficiency.

## GREEN AV TAKES A STEP FORWARD



Despite providing an in-depth framework for driving green initiatives, LEED does not specifically provide points for using AV technology in green buildings. That said, AV systems can play a major role in achieving LEED certification in various categories, including the regulation of lighting, the overall reduction of energy use and the “Innovation in Design” category, which addresses sustainable building expertise. Of course, AV-related energy saving initiatives are highly beneficial regardless of whether a institution is actively pursuing LEED

certification.

In order to provide a more stringent framework for driving green initiatives in AV, InfoComm International, the leading AV industry association, launched a new rating system in 2011 called STEP (Sustainable Technology Environments Program). InfoComm describes the STEP initiative as a “LEED for AV:”

*STEP brings sustainability to the process of planning, designing, integrating and operating technology systems, while reducing long-term environmental impact from technology deployment.*

To learn more about STEP Certification, visit [www.TheStepFoundation.org](http://www.TheStepFoundation.org).

Similar to LEED, the ultimate objective of STEP is for users of AV technology to drive energy and monetary savings from more efficient utilization of their AV assets.

## THE ROLE OF AV IN GREEN INITIATIVES



Many people jump to the conclusion that videoconferencing is AV’s sole contributor to green building initiatives. While videoconferencing provides obvious and easily quantifiable benefits, it is far from the only way in which AV helps make institutions and buildings green. An intelligent campus-wide or building-wide AV strategy can provide enormous benefits that support LEED and STEP initiatives, or that can simply lead to reduced energy expenditures for companies seeking to improve their bottom line.

## ENERGY SAVINGS IN AV EQUIPMENT



A classroom that lacks automation or control technology is almost certainly wasting energy. More often than not, employees tend to leave equipment powered on after they leave the room, especially in a room where multiple devices are being controlled via separate remotes.

Classroom automation technology refers to the systems that manage all the presentation equipment in the room, including displays, projectors, audio and video players, audio and video conferencing systems and more, all from a single user interface. When properly implemented, this technology saves energy in three ways:

1. **Controlling the lighting:** Most room automation solutions include occupancy sensors that turn the lights and on and off based on whether the room is occupied. Just think about the number of times you've passed a vacant conference room with the lights still on.
2. **Providing an easy means to shut down the room:** Most room automation solutions also include one-button shutdown capability, which turns off displays, room PCs and other devices with a single push of a button when attendees vacate the room. There's no need to power down each separate device.
3. **Enabling timed shutdown:** Some solutions include the capability to completely shut down a room based on the amount of time the equipment has remained idle, or based on a specific time of day.

## SMART SYSTEM DESIGN AND ENERGY SAVINGS

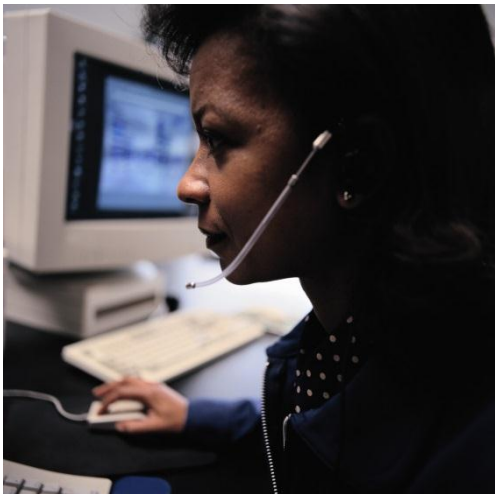
Like any sophisticated electronic equipment, AV systems use a lot of energy. A typical rack of equipment consisting of a controller, AV switcher, amplifier and DSP consumes 400 to 500 watts of power. Not only does this require more electricity to run; it also generates a significant amount of heat, which leads to even more power consumption to ramp up the air conditioning.

One of the more significant trends in AV over the past few years is the advent of All-in-One Presentation Switchers that consolidate up to 10 separate components into a single chassis. So instead of a large rack of boxes and cables in an AV room, these products consolidate the same functionality into a single chassis that saves space, eliminates points of failure and provides significant energy savings - all in a unit that's about the size of a desktop computer.



Let's use AMX's Enova DVX All-in-One Presentation Switcher as an example of how these products save energy. The DVX provides an energy efficient solution that typically consumes 90 watts when active – that's roughly 20% of the energy consumed by a standard rack of equipment. The DVX also includes a standby mode that consumes just 30 watts – that's over 90% less energy than a typical rack consumes. If you calculate the savings over a five-year period for a large number of rooms, the dollar savings from using an All-in-One solution can be very substantial.

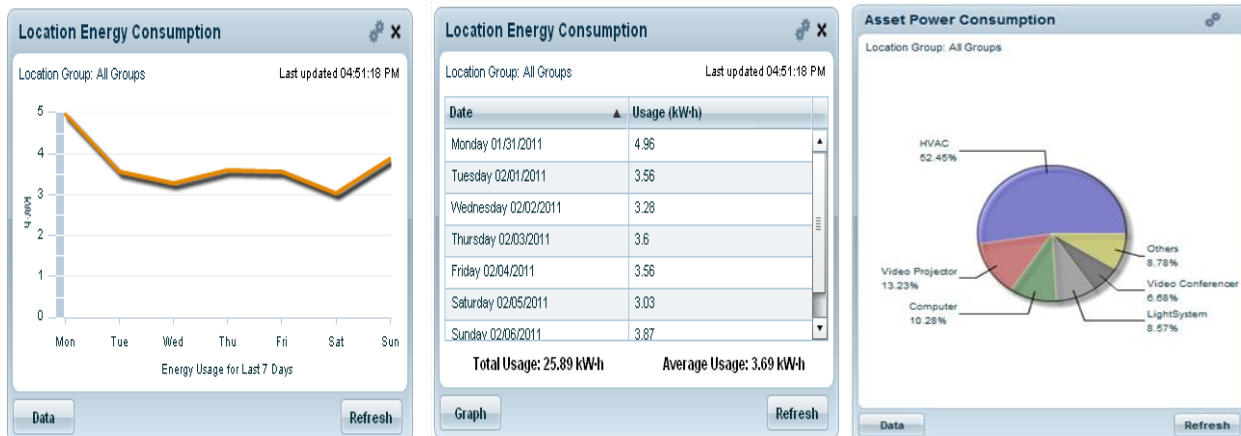
## REMOTE MONITORING AND MAINTENANCE



One of the most significant AV trends in the past few years is the convergence taking place between the AV and IT industries, where institutions are starting to manage their AV systems like their IT systems. Before this trend, many institutions treated AV installations like islands, with no way of centrally monitoring, scheduling and managing them. These days, robust AV installations include software platforms that allow technicians to manage their AV assets in real-time, across the entire campus.

So how does remote monitoring contribute to an institution's green initiatives? Companies and educational institutions frequently leave their AV equipment running for long periods of time since they lack a centralized method for turning them off or switching the equipment to standby mode. In addition, many users of AV equipment lack visibility of energy costs below the building level and are incapable of analyzing these costs in a meaningful way. This is a major concern now that Green initiatives have become so universally important.

Software platforms like AMX's RMS Enterprise can manage the remote power-down of AV assets simply and effectively. They can also support tracking and displaying information on energy management for all monitored assets in the system, regardless of their location. For an IT or AV manager, this means clear visibility of energy utilization along with the ability to remotely place AMX and other equipment in standby mode. This translates to huge energy savings over the life of the equipment.



## CONCLUSION: STEPS YOU CAN TAKE

As you can see, AV can play a significant role in any institution's green initiatives. Here are some steps you can take to start your journey toward greener AV:

1. Deploy an AV solution based on All-in-One Presentation Switchers to reduce energy expenditures.
2. Automate your conference spaces and deploy occupancy sensors wherever practical.
3. Develop a strong institution-wide video conferencing initiative. For small companies that cannot afford enterprise-grade video conferencing systems, use web conferencing tools like Skype and Go-to-Meeting that don't require installation of expensive cameras and other equipment.
4. Use a remote monitoring software system like RMS to proactively manage all your AV assets from a central hub, allowing you to execute remote or scheduled power shut-downs and other energy saving tasks.