

Sandia National Laboratories

FY 2012 Site Sustainability Plan (SSP)

1.4. DOE SSPP and NNSA Goals and Sandia Objectives

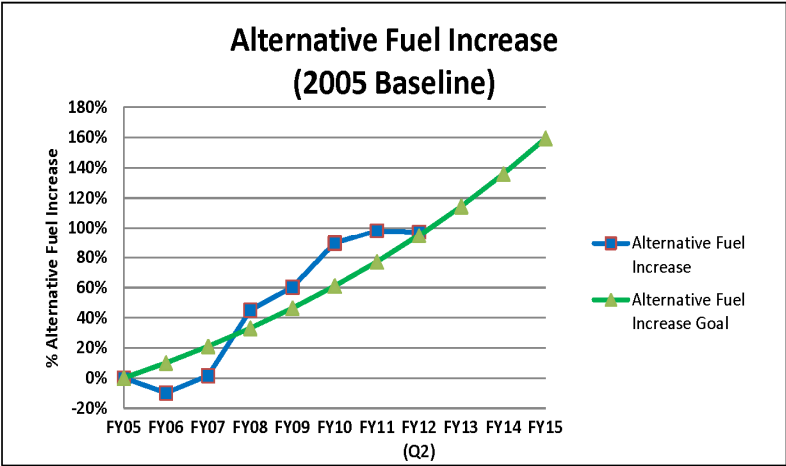
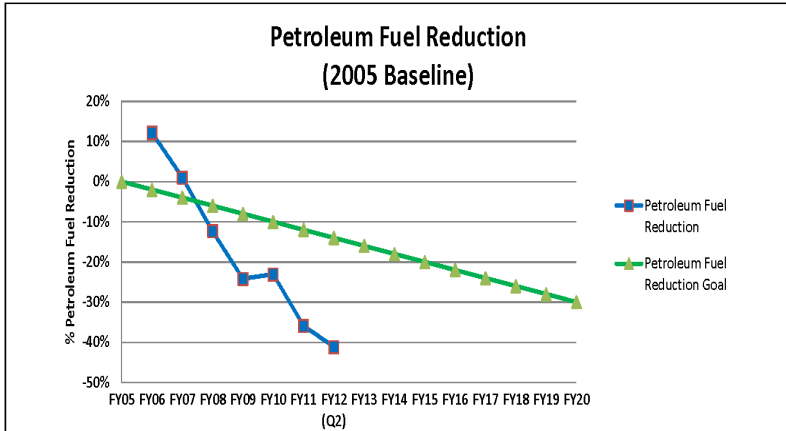
The following table summarizes Sandia's objectives, performance status, and projected performance in support of DOE's goals:

Table 1.1. Sandia Objectives, Performance Status, and Projected Performance

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment																																																				
1.1	2.1	28% scopes 1 and 2 GHG reduction by Fiscal Year (FY) 2020 from a FY 2008 baseline	<p>64% reduction in projected FY 2012 relative to FY 2008 baseline.</p> <p>Sandia considers scope 1 to be medium risk primarily due to the current tracking methods for sulfur hexafluoride (SF6).</p> <table><tr><th>Scope</th><th>Source</th><th>1Q FY12 MTCO2e</th><th>2Q FY12 MTCO2e</th><th>Projected FY12 Remainder</th><th>Total Projected FY12</th><th>FY08 Baseline</th></tr><tr><td rowspan="5">1</td><td>Natural Gas</td><td>6,331</td><td>6,652</td><td>12,983</td><td>25,966</td><td></td></tr><tr><td>Other Stationary Combustion</td><td>511</td><td>822</td><td>1,333</td><td>2,666</td><td></td></tr><tr><td>SF6</td><td>4,360</td><td>5</td><td>4,365</td><td>8,730</td><td></td></tr><tr><td>Other Process Gas</td><td>1,072</td><td>779</td><td>1,851</td><td>3,702</td><td></td></tr><tr><td>Fleet</td><td>459</td><td>392</td><td>851</td><td>1,702</td><td></td></tr><tr><td>2</td><td>Electricity</td><td>40,000</td><td>40,265</td><td>80,265</td><td>160,530</td><td></td></tr><tr><td colspan="2">Total Scopes 1 & 2</td><td></td><td></td><td></td><td>203,296</td><td>565,461</td></tr></table>	Scope	Source	1Q FY12 MTCO2e	2Q FY12 MTCO2e	Projected FY12 Remainder	Total Projected FY12	FY08 Baseline	1	Natural Gas	6,331	6,652	12,983	25,966		Other Stationary Combustion	511	822	1,333	2,666		SF6	4,360	5	4,365	8,730		Other Process Gas	1,072	779	1,851	3,702		Fleet	459	392	851	1,702		2	Electricity	40,000	40,265	80,265	160,530		Total Scopes 1 & 2					203,296	565,461	SNL/NM's Pulsed Power facilities are implementing improved tracking methods in FY 2012 for SF6 use. Because these facilities use the majority of SF6 at SNL, these updates will significantly improve the accuracy of future SF6 emissions calculations.	Medium
Scope	Source	1Q FY12 MTCO2e	2Q FY12 MTCO2e	Projected FY12 Remainder	Total Projected FY12	FY08 Baseline																																																			
1	Natural Gas	6,331	6,652	12,983	25,966																																																				
	Other Stationary Combustion	511	822	1,333	2,666																																																				
	SF6	4,360	5	4,365	8,730																																																				
	Other Process Gas	1,072	779	1,851	3,702																																																				
	Fleet	459	392	851	1,702																																																				
2	Electricity	40,000	40,265	80,265	160,530																																																				
Total Scopes 1 & 2					203,296	565,461																																																			

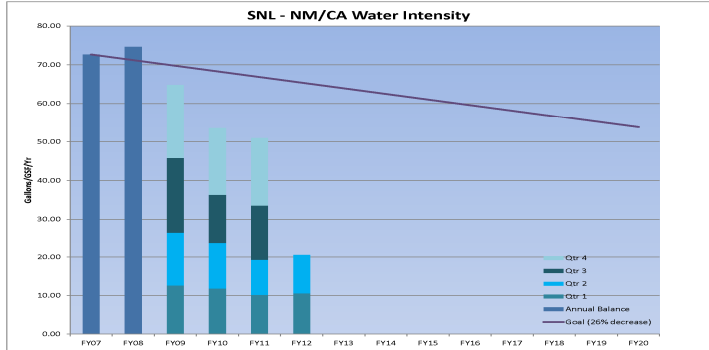
SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment																																																																																				
1.2	2.1.1	30% energy-intensity reduction by FY 2015 from a FY 2003 baseline	<p>Sandia considers this medium risk because of potential mission changes and funding availability.</p> <p>Current status is based on the first 2 quarters of FY 2012. FY 2012 projection is 22% reduction.</p> <p>Regular Building Energy Intensity</p> <table border="1"> <caption>Regular Building Energy Intensity Data (Estimated BTU/GSFYr)</caption> <thead> <tr> <th>Fiscal Year</th> <th>Annual Balance</th> <th>Qtr 1</th> <th>Qtr 2</th> <th>Qtr 3</th> <th>Qtr 4</th> </tr> </thead> <tbody> <tr><td>FY03</td><td>180,000</td><td></td><td></td><td></td><td></td></tr> <tr><td>FY04</td><td>175,000</td><td></td><td></td><td></td><td></td></tr> <tr><td>FY05</td><td>185,000</td><td></td><td></td><td></td><td></td></tr> <tr><td>FY06</td><td>180,000</td><td></td><td></td><td></td><td></td></tr> <tr><td>FY07</td><td>155,000</td><td></td><td></td><td></td><td></td></tr> <tr><td>FY08</td><td>165,000</td><td></td><td></td><td></td><td></td></tr> <tr><td>FY09</td><td>160,000</td><td>45,000</td><td>40,000</td><td>40,000</td><td>35,000</td></tr> <tr><td>FY10</td><td>155,000</td><td>40,000</td><td>45,000</td><td>40,000</td><td>30,000</td></tr> <tr><td>FY11</td><td>150,000</td><td>40,000</td><td>45,000</td><td>40,000</td><td>25,000</td></tr> <tr><td>FY12</td><td>80,000</td><td>40,000</td><td>40,000</td><td></td><td></td></tr> <tr><td>FY13</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>FY14</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>FY15</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	Fiscal Year	Annual Balance	Qtr 1	Qtr 2	Qtr 3	Qtr 4	FY03	180,000					FY04	175,000					FY05	185,000					FY06	180,000					FY07	155,000					FY08	165,000					FY09	160,000	45,000	40,000	40,000	35,000	FY10	155,000	40,000	45,000	40,000	30,000	FY11	150,000	40,000	45,000	40,000	25,000	FY12	80,000	40,000	40,000			FY13						FY14						FY15						<p>In FY 2012, Sandia received sustained investment for the next 4 years and will implement the following energy-reduction activities:</p> <ul style="list-style-type: none"> • Lighting/ventilation occupancy sensor installation • NightWatchman® deployment • Heating, ventilation, and air conditioning (HVAC) system modifications, including “free cooling” projects • Night and weekend energy-use reduction • Building controls upgrades and modifications 	Medium
Fiscal Year	Annual Balance	Qtr 1	Qtr 2	Qtr 3	Qtr 4																																																																																				
FY03	180,000																																																																																								
FY04	175,000																																																																																								
FY05	185,000																																																																																								
FY06	180,000																																																																																								
FY07	155,000																																																																																								
FY08	165,000																																																																																								
FY09	160,000	45,000	40,000	40,000	35,000																																																																																				
FY10	155,000	40,000	45,000	40,000	30,000																																																																																				
FY11	150,000	40,000	45,000	40,000	25,000																																																																																				
FY12	80,000	40,000	40,000																																																																																						
FY13																																																																																									
FY14																																																																																									
FY15																																																																																									
1.3	2.1.2	Individual buildings or processes metering for 90% of electricity by October 1, 2012; for 90% steam, NG, and chilled water (CW) by October 1, 2015, where life-cycle cost effective. The site may also report on potable water as applicable.	Goal has been met.		Low																																																																																				

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment
1.4	2.1.3	Cool roofs, unless uneconomical, for roof replacements, unless project already has CD-2 approval. New roofs must have thermal resistance of at least R-30	Sandia meets this objective: SNL has 152 total cool roofs---151 reflective and one photovoltaic.	See Consolidated Energy Data Report (CEDR) "Conservation & RE Measures" for proposed, new cool-roof projects.	Low
1.5	2.1.4	7.5% of a site's annual electricity consumption from renewable sources by FY 2013 and thereafter (5% FY 2010–2012)	Sandia met this objective using Renewable Energy Credits (RECs) and implementing small RE projects.	Sandia submitted a Statement of Intent to purchase next year's RECs. In addition FMOC is working with our PV researchers. As part of the PV Regional Test Center, Sandia will install up to 1 MW of PV.	Low

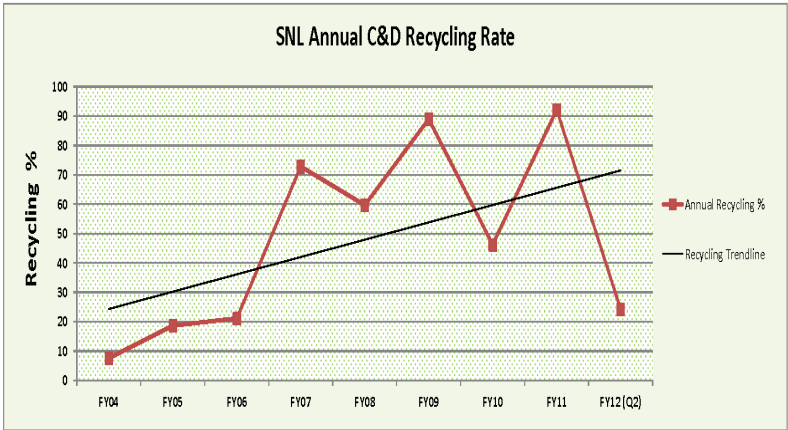
SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment
1.6	2.1.5	10% annual increase in fleet alternative fuel consumption by FY 2015 relative to a FY 2005 baseline	<p>Sandia is on track to meet this objective:</p> <ul style="list-style-type: none"> 97% increase since FY 2005 <p>NOTE: Data for FY 2012 Q1 & Q2 are unavailable; status is based on assumption that half of FY 2012 data represents FY 2012 Q1 & Q2.</p> 	<p>Sandia will continue to meet this objective with the purchase of E-85 and Bio Diesel (B-20) fuels and equipment.</p> <p>The current SSP goal wording does not match EO 13514 requirements. This issue will be brought to the attention of the DOE SPO for revision in the next SSP guidance and document.</p> <p>This goal may be at risk. To meet other requirements, Sandia purchases hybrid vehicles, which do not use alternative fuels.</p>	Low
1.7	2.1.5	2% annual reduction in fleet petroleum consumption by FY 2015 relative to a FY 2005 baseline	<p>Objective has been met.</p> 	Sandia will continue to meet this objective by purchasing E-85 and B-20 AFVs.	Low

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment																																													
1.8	2.1.5	75% of light-duty vehicle purchases must consist of AFVs by FY 2015	Objective has been met. At 96% (FY 2011 at 100%), SNL Fleet Services purchases have met and continually exceed this objective.	Sandia will continue to exceed this objective.	Low																																													
1.9	2.1.5	In FY 2011, reduce NNSA's fleet by 4% from a FY 2005 baseline	NNSA is employing a portfolio approach to meeting this goal.	N/A	Low																																													
2.1	2.2	13% scope 3 GHG reduction by FY 2020 from a FY 2008 baseline	<div>10% decrease in projected FY 2012 relative to FY 2008 baseline. Sandia considers this to be high risk because scope 3 emissions are difficult to control and measure. The greatest opportunity is employee commuting.</div> <table><tr><th>Scope</th><th>Source</th><th>1Q FY12 MTCO2e</th><th>2Q FY12 MTCO2e</th><th>Projected FY12 Remainder</th><th>Total Projected FY12</th><th>FY08 Baseline</th></tr><tr><td rowspan="5">3</td><td>T&D Losses</td><td>2,635</td><td>2,652</td><td>5,287</td><td>10,574</td><td></td></tr><tr><td>Business Travel</td><td>4,454</td><td>3,243</td><td>7,697</td><td>15,394</td><td></td></tr><tr><td>Contracted Waste Disposal</td><td>219</td><td>225</td><td>444</td><td>888</td><td></td></tr><tr><td>Contracted Waste Water Treatment</td><td>36</td><td>36</td><td>72</td><td>144</td><td></td></tr><tr><td>Employee Commuting</td><td>6,003</td><td>6,003</td><td>12,006</td><td>24,011</td><td></td></tr><tr><td>Total Scope 3</td><td></td><td></td><td></td><td>51,011</td><td>56,682</td><td></td></tr></table> <div>NOTE: Emissions from Employee Commuting and Contracted Wastewater are only impacted by the number of employees (at least until a new commuter survey is completed). So the projected emissions for these areas are the FY2011 emissions.</div>	Scope	Source	1Q FY12 MTCO2e	2Q FY12 MTCO2e	Projected FY12 Remainder	Total Projected FY12	FY08 Baseline	3	T&D Losses	2,635	2,652	5,287	10,574		Business Travel	4,454	3,243	7,697	15,394		Contracted Waste Disposal	219	225	444	888		Contracted Waste Water Treatment	36	36	72	144		Employee Commuting	6,003	6,003	12,006	24,011		Total Scope 3				51,011	56,682		<div>Last year, Sandia's Commuter Assistance Program performed an evaluation of preferred parking locations based on carpool registrations, carpooler requests, and site assessments around SNL/NM.</div> <div>The Commuter Assistance Program purchased posts and signs for additional designated carpool parking spaces around SNL/NM. The installations are under way, and Facilities will install 127 additional designated carpool spaces in FY 2012.</div>	High
Scope	Source	1Q FY12 MTCO2e	2Q FY12 MTCO2e	Projected FY12 Remainder	Total Projected FY12	FY08 Baseline																																												
3	T&D Losses	2,635	2,652	5,287	10,574																																													
	Business Travel	4,454	3,243	7,697	15,394																																													
	Contracted Waste Disposal	219	225	444	888																																													
	Contracted Waste Water Treatment	36	36	72	144																																													
	Employee Commuting	6,003	6,003	12,006	24,011																																													
Total Scope 3				51,011	56,682																																													

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment
3.1	2.4.1	15% of existing buildings greater than 5,000 GSF are compliant with the Guiding Principles (GP) of High-Performance Sustainable Buildings (HPSBs) by FY 2015	<p>4.2% of SNL existing buildings over 5,000 GSF (by number of buildings) were compliant in FY 2011.</p> <p>10.1% of existing buildings over 5,000 GSF (by GSF) were compliant in FY 2011.</p> <p>Sandia considers this medium risk because of pending GP changes and funding availability.</p>	Sandia is on track to get 4 buildings compliant by the end of FY 2012. Overall percentage of GP will increase to 6.3% by buildings and 11.0% by GSF.	Medium
3.2	2.4.2	All new construction, major renovations (MRs), and alterations of buildings greater than 5,000 GSF must comply with the GP and where the work exceeds \$5 million, each are Leadership in Energy and Environmental Design (LEED®) New Construction (NC) Gold certification or equivalent	<p>No new buildings will be constructed in FY 2012.</p> <p>Sandia considers this medium risk because LEED NC or GP for NC may not be the appropriate certification for High-Energy Mission Support Facilities (HEMSF), renovated, or altered buildings.</p>	Future new construction and comprehensive MR projects will be designed and constructed to be LEED Gold.	Medium

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment
4.1	2.5.1	26% water intensity reduction by FY 2020 from a FY 2007 baseline	<p>Sandia exceeds the objective with 5.27% reduction in FY 2011 relative to FY 2010 and 33.77% relative to FY 2007 baseline. Sandia considers this medium risk because of potential mission changes and funding availability. Because of mid-FY drought conditions, cooling loads and irrigation will likely increase. FY 2012 projection is 10% to 15% reduction above last year.</p> 	Sandia will continue to exceed this objective.	Medium
4.2	2.5.1	20% water-consumption reduction of industrial, landscaping, and agricultural (ILA) water by FY 2020 from a FY 2010 baseline	Included in previous objective.	Included in previous objective.	Medium

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment																
5.1	2.6.1	Divert at least 50% of nonhazardous solid waste, excluding construction and demolition debris by FY 2015	<p>Year-to-Date Ending 2nd Quarter FY 2012:</p> <ul style="list-style-type: none">• SNL/NM – 67.5%• SNL/CA – 77.0% <div><p>Increase Solid Waste Diversion</p><table><thead><tr><th>Period</th><th>% Diversion (by Wt)</th></tr></thead><tbody><tr><td>Q1 FY11</td><td>57.0%</td></tr><tr><td>Q2 FY11</td><td>58.5%</td></tr><tr><td>Q3 FY11</td><td>61.0%</td></tr><tr><td>Year End FY11</td><td>61.0%</td></tr><tr><td>Q1 FY12</td><td>65.0%</td></tr><tr><td>Q2 FY12</td><td>67.5%</td></tr><tr><td>Target</td><td>50.0%</td></tr></tbody></table></div>	Period	% Diversion (by Wt)	Q1 FY11	57.0%	Q2 FY11	58.5%	Q3 FY11	61.0%	Year End FY11	61.0%	Q1 FY12	65.0%	Q2 FY12	67.5%	Target	50.0%	Currently, Sandia recycles 50 different items and continually seeks new opportunities.	Low
Period	% Diversion (by Wt)																				
Q1 FY11	57.0%																				
Q2 FY11	58.5%																				
Q3 FY11	61.0%																				
Year End FY11	61.0%																				
Q1 FY12	65.0%																				
Q2 FY12	67.5%																				
Target	50.0%																				

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment
5.2	2.6.1	Divert at least 50% of construction and demolition (C&D) materials and debris by FY 2015	<p>Year-to-Date Ending 2nd Quarter FY 2012:</p> <ul style="list-style-type: none"> • SNL/NM – 24.2% • SNL/CA – 85.5% <p>NOTE: The SNL/NM diversion rate does not reflect stockpiled concrete and asphalt diverted in FY2012 for recycling. Concrete and asphalt stockpiles are quantified during crushing operations performed by a contracted aggregate processing vendor. Because processing (or crushing) was performed in FY 2011, no processing is scheduled for FY2012. Below, the graph illustrates the C&D waste diversion trend for SNL/NM and the impact from processing concrete and asphalt in FY 2011.</p> 	Sandia will continue current C&D recycling program.	Low
6.1	2.7	Procurements meet sustainability requirements and include sustainable acquisition clause (95% each year)	Sandia reviewed contract actions accomplished in FY 2011 for construction and custodial services; 100% of the contract actions included requirements for sustainable acquisition.	<ul style="list-style-type: none"> • Changes to the SNL Management and Operations (M&O) contract to include required sustainable acquisition (SA) language (DEAR 970.5223-7) were completed in 1st Quarter, FY 2012, placed in Section I ("eye"), clause #126. • Department 4143 assists Procurement with new contracts by participating in their biweekly meeting. 	Low

SSPP Goal #	SSP Section	DOE SSPP & NNSA Goal/Sandia Objective	Performance Status	Planned Actions & Contribution	Risk of Non-attainment
7.1	2.8	All data centers are metered to measure a monthly Power Utilization Effectiveness (PUE) (100% by FY 2015)	<p>Sandia considers this high risk because it is a new goal for FY 2012 with a short time frame. The definition of data center has changed and may continue to change, which will affect the baseline. Meter installation will depend on funding availability.</p> <p>Recent analysis reveals up to 90 spaces that meet the DOE definition for data center.</p>	Sandia is working with Org. 9300 to develop a corporate strategy to reduce the number of data centers.	High
7.2	2.8	Maximum annual weighted average PUE of 1.4 by FY 2015	<p>Based on estimated PUE data, only 2 meet the DOE definition for data center.</p> <p>Sandia considers this high risk because it is a new goal for FY 2012 with a short time frame. The definition of data center has changed and may continue to change, which will affect the baseline. Funding availability is an issue.</p>	<p>Sandia is implementing several projects:</p> <ul style="list-style-type: none"> • New CRAC units • Building 850 chiller plant bypass • Building 726 "free cooling" heat exchanger to improve performance of the 2 large data centers. <p>Sandia will work with Org. 9300 to develop a corporate strategy to reduce the number of data centers.</p>	High
7.3	2.8	Electronic stewardship - 100% of eligible PCs, laptops, and monitors with power management actively implemented and in use by FY 2012	<p>Based on current SPO scorecard, Sandia is at 96%.</p> <p>Based on current funding profile and interpretation of goal language, the risk is changed to medium.</p>	<p>Ending 2nd Quarter FY12, Night-Watchman has been deployed on all eligible PCs at SNL/NM and SNL/CA. Eligible PCs are those using the Microsoft Windows 7 operating system, which number over 9,000 computers. Ineligible PCs (using the Microsoft Windows XP operating system) number over 3,000 computers.</p> <p>NightWatchman is built into the common operating environment. It is added to each old computer that is undergoing a rebuild.</p> <p>Past project funding for the OS migration ran out; however, a new project has been funded to complete migration on the rest of the Windows XP computers over the next few months. The projection is to be fully migrated by November 2012.</p>	Medium