CLAIMS:

1. A method of generating energy comprising:

reducing the recalcitrance of a biomass feedstock formed from a lignocellulosic material by treating the biomass feedstock with a radiation dose of between 10 Mrad and about 100 Mrad;

saccharifying the biomass feedstock to form a saccharified biomass material;

wherein the saccharified biomass material comprises inorganic solids; and

combusting the saccharified biomass material and inorganic solids to produce energy.

2. The method of claim 1, wherein the saccharified biomass material includes cells.

3. The method of claim 2, wherein the cells are selected from the group consisting of yeast cells, bacterial cells, fungal cells and mixtures thereof.

4. The method of any of the above claims, wherein the saccharified biomass material includes protein material.

5. The method of claim 4, wherein the protein material is an enzyme material.

6. The method of any one of the above claims, wherein the saccharified material includes denatured enzyme material.

7. The method of any one of the above claims, wherein the saccharified biomass material comprises lignocellulosic residue from lignocellulosic material that has been treated to reduce its recalcitrance prior to saccharification.

8. The method of claim 7, wherein the lignocellulosic material has been treated with accelerated electrons to reduce its recalcitrance.

9. The method of claim 8, wherein the electrons have an average energy between about 0.3 MeV and about 5 MeV, or between about 0.5 MeV and about 3.5 MeV, or between about 0.8 MeV and about 2 MeV.

10. The method of claim 9, wherein the lignocellulosic biomass has been treated to a total dose between about 15 Mrad and about 50 Mrad, or between about 20 Mrad and about 45 Mrad, or between about 25 Mrad and about 40 Mrad.

11. The method of claim 1, wherein the inorganic solids is selected from the group consisting of diatomaceous earth, celite, silica, pumice, perlite, alumina, zeolites, sand and mixtures thereof.

12. The method of any one of the above claims, wherein the saccharified biomass material includes less than 60 percent moisture, or less than 50 percent moisture, or less than 45 percent moisture, or less than 40 percent moisture, or less than 30 percent moisture.

13. The method of any one of the above claims, wherein saccharified biomass material includes less than 5 percent ash after combustion.

14. The method of any one of the above claims, wherein the saccharified biomass material includes less than 0.5 percent sulfur.

15. The method of any one of the above claims, wherein the saccharified biomass material includes less than 35 percent by weight carbohydrates on a dry basis, or less than 30 percent by weight carbohydrates on a dry basis, or less than 25 percent by weight carbohydrates on a dry basis, or less than 20 percent by weight carbohydrates on a dry basis, or less than 10 percent by weight carbohydrates on a dry basis.

16. The method of any one of the above claims, wherein the energy is in the form of heat or electrical energy.

17. The method of any one of the above claims, wherein during combustion a boiler is utilized.

18. The method of claim 17, wherein the boiler is selected from the group consisting of a stoker grate boiler, a fluidized bed boiler and a co-fired boiler.

19. The method of any of one of the above claims, wherein during combustion, a gasifier is utilized.

20. The method of claim 19, wherein the gasifier is a fixed bed or a fluidized bed gasifier.

21. The method of any one of the above claims, wherein the saccharified biomass is collected utilizing a rotary drum filter prior to combustion.

22. The method of any one of the above claims, wherein the saccharified biomass is collected utilizing a centrifuge prior to combustion.