## 1 输入整体数据函数

void SCHEDULE::inputfoundationdata()

{

ifstream fin("microgrid\_foudation.txt");

if (!fin)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin.ignore(1024,'\*');

fin>>controllableunitnum>>node>>energystoragenum>>renewableenergynum>>loadnum>>T>>pollutionnum;

fin.close();

}

## 2 输入静态数据函数

void SCHEDULE::inputstaticdata()

{

ifstream fin1("controllable\_unit.txt");

if (!fin1)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin1.ignore(10240,'\*');

for(int i=0;i<controllableunitnum;i++)

{

fin1>>Controllableunitdata[i].Identifier>>Controllableunitdata[i].name>>Controllableunitdata[i].type>>Controllableunitdata[i].curve;

for(int j=0;j<node;j++)

{

fin1>>Controllableunitdata[i].Pi[j];

}

for(int j=0;j<node;j++)

{

fin1>>Controllableunitdata[i].ci[j];

}

fin1>>Controllableunitdata[i].a>>Controllableunitdata[i].b>>Controllableunitdata[i].c>>Controllableunitdata[i].fuelcost;

fin1>>Controllableunitdata[i].Shi>>Controllableunitdata[i].deltiup>>Controllableunitdata[i].deltidown>>Controllableunitdata[i].PHi>>Controllableunitdata[i].PLi>>Controllableunitdata[i].RHi>>Controllableunitdata[i].MOTi>>Controllableunitdata[i].MDTi>>Controllableunitdata[i].COM>>Controllableunitdata[i].Invest>>Controllableunitdata[i].year>>Controllableunitdata[i].k>>Controllableunitdata[i].Ramp;

for(int j=0;j<pollutionnum;j++)

{

fin1>>Controllableunitdata[i].Q[j];

}

}

fin1.close();

ifstream fin2("energy\_storage.txt");

if (!fin2)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin2.ignore(10240,'\*');

for(int i=0;i<energystoragenum;i++)

{

fin2>>Energystoragedata[i].Identifier>>Energystoragedata[i].name>>Energystoragedata[i].type>>Energystoragedata[i].PgHk>>Energystoragedata[i].PgLk>>Energystoragedata[i].PpHk>>Energystoragedata[i].PpLk>>Energystoragedata[i].VHk>>Energystoragedata[i].VLk>>Energystoragedata[i].yitag>>Energystoragedata[i].yitap>>Energystoragedata[i].Wk;

fin2>>Energystoragedata[i].Invest>>Energystoragedata[i].MaintenanceCost>>Energystoragedata[i].year>>Energystoragedata[i].cyclenum;

}

fin2.close();

ifstream fin3("pollution.txt");

if (!fin3)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin3.ignore(1024,'\*');

for(int i=0;i<pollutionnum;i++)

{

fin3>>Qgrid[i];

}

fin3.ignore(1024,'\*');

for(int i=0;i<pollutionnum;i++)

{

fin3>>V[i];

}

fin3.close();

ifstream fin4("powergrid\_microgrid.txt");

if (!fin4)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin4.ignore(1024,'\*');

fin4>>Griddata.Pbuymax>>Griddata.Psellmax;

fin4>>Griddata.Ramp;

fin4.close();

ifstream fin5("load.txt");

if (!fin5)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin5.ignore(1024,'\*');

for(int i=0;i<4;i++)

{

fin5>>Pcutlevel[i]>>Pcutcost[i];

}

fin5.ignore(1024,'\*');

for(int j=0;j<loadnum;j++)

{

fin5>>Loaddata[j].Identifier>>Loaddata[j].name>>Loaddata[j].error>>Loaddata[j].level;

}

fin5.close();

ifstream fin6("renewable\_energy.txt");

if (!fin6)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin6.ignore(1024,'\*');

for(int i=0;i<renewableenergynum;i++)

{

fin6>>Renewableenergydata[i].Identifier>>Renewableenergydata[i].name>>Renewableenergydata[i].type>>Renewableenergydata[i].error;

}

fin6.close();

}

## 3 输入动态数据函数

void SCHEDULE::inputdynamicdata()

{

int temp;

ifstream fin1("renewable\_energy\_dynamic.txt");

if (!fin1)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin1.ignore(1024,'\*');

for(int i=0;i<renewableenergynum;i++)

{

fin1>>temp;

for(int j=0;j<T;j++)

{

fin1>>Renewableenergydata[temp-1].PnewHt[j];

}

}

fin1.close();

ifstream fin2("reserve\_dynamic.txt");

if (!fin2)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin2.ignore(1024,'\*');

for(int i=0;i<T;i++)

{

fin2>>Prt[i];

}

fin2.close();

ifstream fin3("load\_dynamic.txt");

if (!fin3)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin3.ignore(1024,'\*');

for(int j=0;j<loadnum;j++)

{

fin3>>temp;

for(int i=0;i<T;i++)

{

fin3>>Loaddata[temp-1].Pdt[i];

}

}

fin3.close();

ifstream fin4("electricity\_price.txt");

if (!fin4)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin4.ignore(1024,'\*');

for(int i=0;i<T;i++)

{

fin4>>Griddata.Buy[i];

}

fin4.ignore(1024,'\*');

for(int i=0;i<T;i++)

{

fin4>>Griddata.Sell[i];

}

fin4.close();

}

## 4 输入调度开始时刻的初始值函数

void SCHEDULE::setchangeinit()

{

int temp;

ifstream fin("changeinit.txt");

if (!fin)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin.ignore(1024,'\*');

for(int I=0;I<controllableunitnum;I++)

{

fin>>temp;

fin>>Controllableunitdata[temp-1].Pinit>>Controllableunitdata[temp-1].Uinit;

}

fin.ignore(1024,'\*');

for(int I=0;I<energystoragenum;I++)

{

fin>>temp;

fin>>Energystoragedata[temp-1].Einit;

}

fin.close();

}

## 5 输入控制参数函数

void SCHEDULE::inputdecisiondata()

{

ifstream fin("decisiondata.txt");

if (!fin)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fin.ignore(1024,'\*');

fin>>gridislanddecision;

fin.ignore(1024,'\*');

fin>>modeldecision;

fin.close();

}

## 输出函数

void SCHEDULE::outputtxt()

{

ofstream fout("output.txt");

if (!fout)

{cout <<"\n不能打开这个文件"<<endl; exit(1);}

fout<<"新能源机组："<<endl<<"编号"<<"设备名称"<<"新能源机组发电功率"<<endl;

for(int i=0;i<renewableenergynum;i++)

{

fout<<Renewableenergydata[i].Identifier<<" "<<Renewableenergydata[i].name<<" ";

for(int j=0;j<T;j++)

{

fout<<setiosflags(ios::fixed)<<setprecision(1)<<Pnewtout[i][j]<<" ";

}

fout<<endl;

}

fout<<"储能单元："<<endl<<"编号"<<"设备名称"<<"储能单元充放电功率"<<endl;

for(int I=0;I<energystoragenum;I++)

{

fout<<Energystoragedata[I].Identifier<<" "<<Energystoragedata[I].name<<" ";

for(int J=0;J<T;J++)

{

fout<<Pktout[I][J]<<" ";

}

fout<<endl;

}

fout<<endl;

fout<<"可控机组："<<endl<<"编号"<<"设备名称"<<"可控机组发电功率"<<endl;

for(int i=0;i<controllableunitnum;i++)

{

fout<<Controllableunitdata[i].Identifier<<" "<<Controllableunitdata[i].name<<" ";

for(int j=0;j<T;j++)

{

fout<<Pitout[i][j]<<" ";

}

fout<<endl;

}

fout<<"负荷："<<endl<<"编号"<<"负荷名称"<<"是否切负荷"<<endl;

for(int i=0;i<loadnum;i++)

{

fout<<Loaddata[i].Identifier<<" "<<Loaddata[i].name<<" ";

for(int j=0;j<T;j++)

{

fout<<Ucutxset[i][j]<<" ";

}

fout<<endl;

}

fout<<"与大电网之间的购售电:"<<endl;

for(int j=0;j<T;j++)

{

fout<<Pbuytout[j]-Pselltout[j]<<" ";

}

fout.close();

}