R codes for the model:

```
> library(readxl)
> Dataset_Eco342A <- read_excel("C:/Users/sid24/Desktop/Dataset_Eco342A.xlsx")
> View(Dataset_Eco342A)
> install.packages("micEconCES")
> library(micEconCES)
> res = cesEst("Output (Y)", c("Labour (L)", "Capital (K)", "Energy (E)"),
Dataset_Eco342A)
> summary(res)
> cesCalc(c("Labour (L)", "Capital (K)", "Energy (E)"), Dataset_Eco342A,
coef(res), nested =TRUE)
```

OUTPUT:

```
Coefficients:
        Estimate Std. Error t value Pr(>|t|)
gamma    0.08235    0.78127   0.105    0.916
delta_1  2.28413    3.29024   0.694    0.488
delta    0.34870    1.91669   0.182    0.856
rho_1   -0.04473    0.17437  -0.257    0.798
rho     -0.40235    1.42491  -0.282    0.778

Residual standard error: 1.996989
Multiple R-squared: 0.7588273

Elasticities of Substitution:
               Estimate Std. Error t value Pr(>|t|)
E_1_2 (HM)       1.0468     0.1911   5.479 4.29e-08 ***
E_(1,2)_3 (AU)   1.6732     3.9892   0.419    0.675
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
HM = Hicks-McFadden (direct) elasticity of substitution
AU = Allen-Uzawa (partial) elasticity of substitution


cesCalc estimation:
[1] 21.14180 26.69667 26.15995 28.34016 24.81796 23.99944 23.37701 23.41466
24.46984 23.73234
[11] 24.30095 24.21310 23.92122 21.20274 19.39057 17.84978 17.28183 15.52202
15.74408 15.33820
[21] 14.40075 14.56285 14.89940 15.35144 15.58608 15.98370 16.99964 17.09861
17.51439 18.16596
[31] 18.47297 18.98960
```