Nutrient	Guaranteed Analysis Values	Moisture-Adjusted Guaranteed Analysis Values	Moisture- & Energy-Adjusted Guaranteed Analysis Values	Growth & Reproduction Cat Food Profile Values per kg DM	Status of Energy-Adjusted Guaranteed Analysis vs. Profile Values
Phosphorus	min. 0.2%	0.8%	0.71%	0.8	Low
Energy[a]	1120 kcal ME/kg AF	4480 kcal ME/kg DM	4000 kcal ME/kg DM	4000 kcal ME/kg DM	

[a] Energy = (3.5 × g Crude Protein) + (8.5 × g Crude Fat) + (3.5 × g Nitrogen Free Extract[b] (CHO))
= (3.5 × 90) + (8.5 × 70) + (3.5 × 60) = 1120

[b] % Nitrogen Free Extract = 100 − (% Crude Protein + % Crude Fat + % Crude Fiber + % Moisture + % Ash)

A cursory examination of the values listed in the guaranteed analysis compared to the minimum values given in the Cat Food Nutrient Profiles expressed as per kg DM containing 4000 kcal ME revealed that a direct comparison would not be valid. Because the food in Example B1 was 75% moisture (25% DM), the major reason for the discrepancy was likely due to water content. By first dividing the guaranteed values by the proportion of DM (0.25), the moisture-adjusted guaranteed values were derived. Comparing these corrected values with the Profile values, this food appeared to meet the minimums for a growth claim.

However, in this example, direct comparison of the moisture-adjusted guaranteed values with the Profile values was premature. The high DM crude fat content of the food compared to the Profile value (25% vs. 9.0%) was an indication that the food was probably more energy-dense than the Profile value of 4000 kcal ME/kg DM. When calculated, in fact, it was found to be 4480 kcal ME/kg DM (1120 kcal ME/kg AF). Therefore a second adjustment to account for the differences in energy density was warranted. This was achieved by dividing each moisture-adjusted guaranteed value by 4480 (the DM energy density of the food) and then multiplying the result by 4000 (the standard energy density). This second manipulation revealed that the energy-adjusted guaranteed analysis values for the calcium and phosphorus were, in fact, below minimum concentrations for growth.

As demonstrated with the moisture correction methods above, an alternative to correcting the values of the food to meet the Profile energy density is correcting the Profile values to meet the food's energy density. Below, each Profile value was divided by 4000, and the result was multiplied by the appropriate value for energy density (1120 in this example).

Example B2: A Canned Cat Food Making a Growth Claim: Energy Adjusted Profile DM Values

Nutrient	Guaranteed Analysis Values	Cat Food Nutrient Profile Minimum Values for Growth	Energy Adjusted Profile Values	Guaranteed vs. Energy Adjusted Profile Values (Column 2 vs. 4)
Crude Protein	min. 9%	30.0%	8.4%	OK
Crude Fat	min. 7%	9.0%	2.5%	OK

Nutrient	Guaranteed Analysis Values	Cat Food Nutrient Profile Minimum Values for Growth	Energy Adjusted Profile Values	Guaranteed vs. Energy Adjusted Profile Values (Column 2 vs. 4)
Crude Fiber	max. 1%			
Moisture	max. 75%			
Ash	max. 2%			
Calcium	min. 0.25%	1.0%	0.28%	Low
Phosphorus	min. 0.2%	0.8%	0.22%	Low
Energy	1120 kcal ME/kg AF	4000 kcal ME/kg DM	1120 kcal ME/kg AF	

Note that although the energy-adjusted minimum for crude fat calculated out to be 2.5%, a much higher concentration of crude fat (in this case 7%) predefined the higher energy density and dictated the need for energy adjustment in the first place. Because for the most part a higher concentration of crude fat predetermines what the higher energy density will be, the energy-adjusted Profile minimum value for crude fat should always be met and will often be grossly exceeded.

The last method for correcting for energy density is to convert the guaranteed values for the food to a per 1000 kcal basis, and to compare these values with those listed in the appropriate Profile based on Calorie Content. This is accomplished by dividing the AF values in the guaranteed analysis by the AF energy density (1120 kcal ME/kg in this example) and then multiplying the result by 1000 kcal ME/kg. The result is the values appearing in the fourth column of Example B3 below with the conclusion being identical to that reached in Examples B1 and B2 above.

Example B3: A Canned Cat Food Making a Growth Claim: Energy Adjusted Guaranteed Analysis Values

Nutrient	Guaranteed Analysis Values	Amount per kg (1000 g) As-Fed	Product Amount per 1000 kcal ME	Profile Amount per 1000 kcal ME	Status
Crude Protein	9%	90 g	80.4 g	75	OK
Crude Fat	7%	70 g	62.5 g	22.5	OK
Crude Fiber	1%	10 g			
Moisture	75%	750 g			
Ash	2%	20 g			
Calcium	0.25%	2.5 g	2.2 g	2.5	Low
Phosphorus	0.20%	2.0 g	1.9 g	2.0	Low
Nitrogen Free Extract (CHO)[a]	(8%)	60 g			
Energy[b]		1120 kcal			

[a] % Nitrogen Free Extract = 100 − (% Crude Protein + % Crude Fat + % Crude Fiber + % Moisture + % Ash)

[b] Energy = (3.5 × 90) + (8.5 × 70) + (3.5 × 60) = 1120